A Primer to explore the Academic Majors offered at the United States Military Academy
• Purpose – Page 2

• Overview of your Curriculum – Page 3

• Standard Course Schedule (8TAP) – Page 4

• Listing of Academic Majors – Page 5

• The Way Ahead (Timeline) Chart
• This primer is designed to give you information so you can start exploring an academic major.
  – Just the beginning and should not be your only source to make a decision.
  – Has POC information for every major so you can reach out to that Department to start a conversation.
### Class of 2024 Curriculum

CL24 selects a Major - Term 2

#### 37 Core Course Curriculum

<table>
<thead>
<tr>
<th></th>
<th>Course Name</th>
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<tbody>
<tr>
<td>1</td>
<td>Chemistry 1</td>
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<tr>
<td>2</td>
<td>Physics 1</td>
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<td>3</td>
<td>Chem 2 / Physics 2 / Bio</td>
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<td>Math (Modeling)</td>
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<td>5</td>
<td>Math (Calculus)</td>
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<td>6</td>
<td>Math (Statistics)</td>
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<td>Physical Geography</td>
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<tr>
<td>10</td>
<td>Eng Sequence course 1</td>
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<td>11</td>
<td>Eng Sequence course 2</td>
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<td>Political Science</td>
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<td>15</td>
<td>International Relations</td>
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<td>16</td>
<td>History 1 (Mil His)</td>
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<td>17</td>
<td>History 2 (U.S. or Regional)</td>
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<td>History 3 (Mil Art)</td>
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<td>Composition</td>
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<td>Literature</td>
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<td>Philosophy &amp; Ethical Reasoning</td>
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<td>Foreign Language 1</td>
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<td>Constitutional/Military Law</td>
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<td>26</td>
<td>Military Leadership</td>
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<td>Military Science 1</td>
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<td>28</td>
<td>Military Science 2</td>
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<td>29</td>
<td>Military Science 3</td>
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<td>Officership (MX400)</td>
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<tr>
<td>31</td>
<td>DPE 1 Boxing</td>
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<td>32</td>
<td>DPE 2 Military Movement</td>
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<td>33</td>
<td>DPE 3 Personal Fitness</td>
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<td>34</td>
<td>DPE 4 Survival Swimming</td>
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<td>DPE 5 Combat Apps</td>
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<td>DPE 6 Army Fitness</td>
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<td>37</td>
<td>DPE 7 Lifetime Sport</td>
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#### 13 Elective Courses

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<tr>
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<td>Major course 9</td>
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<td>50</td>
<td>Capstone</td>
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#### Curricular Framework

1. Designed to address the needs of the Army of today and the future
2. Layered and integrated threads provide foundational knowledge
3. Modern Thayer Method teaches cadets how to think, not what to think

**STEM (13), HSS (17), Phys Ed (7), Electives (13)**
## Class of 2023 Standard Course Scheduling

<table>
<thead>
<tr>
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<th>PLEBE</th>
<th>YEARLING</th>
<th>COW</th>
<th>FIRSTIE</th>
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<td><strong>Spring</strong></td>
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<tr>
<td>Phys 1</td>
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<td>Chem 1</td>
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<td>Poly Sci</td>
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<td>Psych</td>
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<td>MIL ART</td>
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<tr>
<td>IT/CYBER</td>
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**Credits:**
- 16.5-17.5
- 17.5
- 17
- 16-17
- 15+
- 15+
- 15+
- 15+

**Credits with MS/PE balanced:**
- 17.5-18.5
- 19
- 18.5
- 18-19
- 16+
- 16.5+
- 16.5+
- 15+

---

- **Red lines:** per math placement only; Must satisfy PHYS 1 requisite
- **Yellow shaded cells:** slots to Schedule in each Major including Complementary Support Courses (CSC), Science 2 & 3CES

---

Back to ToC
<table>
<thead>
<tr>
<th>Major</th>
<th>Dept.</th>
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<tbody>
<tr>
<td>American Politics</td>
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<td>Defense Strategic Studies</td>
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<td>Economics</td>
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<td>Foreign Language</td>
<td>DFL</td>
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<td>Geography</td>
<td>GENE</td>
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<tr>
<td>Geospatial Information Science</td>
<td>GENE</td>
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<tr>
<td>History: International/Military/US</td>
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<tr>
<td>International Affairs</td>
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<td>Kinesiology</td>
<td>DPE</td>
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<td>Law/Legal Studies</td>
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<td>Life Science</td>
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<td>Mathematical Sciences</td>
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<td>Mechanical Engineering</td>
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<td>Nuclear Engineering</td>
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<td>Operations Research</td>
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<td>Philosophy</td>
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<td>Physics</td>
<td>PANE</td>
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<td>Sociology</td>
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<td>Space Science</td>
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<td>Systems Engineering</td>
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**NOTES:** 1. These links take you to the first page of the major’s section. 2. Academic Majors are taught by these Departments.
ENGINEERING
PSYCHOLOGY

Understanding Human Behavior to Create Solutions for Human-Centered Technology

Department of Behavioral Sciences and Leadership
“Building Stronger Leaders!”

What is Engineering Psychology?
Have you ever used technology or a piece of equipment that was confusing, frustrating, and just didn’t work the way that it should? That’s because the designer forgot to keep you, the user, in mind. When it’s your phone, it’s an inconvenience; on the battlefield, it can be disastrous. Poorly designed equipment could cause costly errors or even injure Soldiers.

Engineering Psychology teaches you how people process information. Then you take that knowledge and design safe, effective, and efficient technology. We make intuitive technology, and improve human performance.

The products of Engineering Psychology are all around us, from the well designed Stryker Remote Weapon System (done well) to the confusing CIS interface (done not so well). E-Psych Cadets work on projects that make a tangible impact including:

- Afghan Army Camo re-design
- ARES Augmented Reality Sand table
- Room-clearing Robots
- Virtual Reality therapist (Ellie) working with Soldiers suffering from PTSD

Why Engineering Psychology?
Technology is everywhere and is an integral part of our lives—from phones in our pockets to an Apache cockpit. We rely on it, and Engineering Psychology will teach you humans’ capabilities and limitations, how to identify good and poor designs, and how to integrate technology to improve performance in daily life and on the battlefield.

Engineering Psychology is the only academic program at West Point that combines an in-depth understanding of human behavior and integrates that with engineering principles designed to improve how we interact with technology.

What Will You Study?
In Yuk and Cow year, you will learn the theories that can be used to explain and predict human behavior. You will focus your understanding on the mental and physical capabilities and limitations of humans while learning the art of applied experimental research.

As a Firstie, you will integrate this information and apply these theories to solve Army and Soldier problems with stakeholders from corporations, DOD labs and other universities.
Engineering Psychology Curriculum

**Yearling Year**
You will take a deeper dive into the cognitive capabilities of the human mind.
- **PL390** Biological Psychology
- **PL392** Cognitive Psychology

**Cow Year**
You will learn the mental and physical capabilities and limitations of humans and be introduced to how to conduct applied experimental research.
- **PL386** Experimental Psychology
- **PL391** Sensation & Perception
- **MA376** Probability & Statistics
- **PL394** Anthropometrics & Biomechanics

**Firstie Year**
You will analyze existing systems to identify and correct shortcomings, and you will develop new systems based on user-centered design principles.
- **PL475** Human Computer Interaction
- **PL488-E** E-Psych Colloquium
- **PL485** Human Factors Engineering
- **PL490** E-Psych in Design
- **PL497** Independent Study (Honors)
- **PL498** Independent Study (Honors)

E-Psych Laboratories
Our laboratory facilities provide exceptional support for undergraduate teaching and research in Engineering Psychology:
- **Simulations Lab**: Analyze linguistic patterns of Soldiers with PTSD talking to Ellie, a VR therapist. Investigate the efficacy of augmented reality in battlespace visualization using ARES.
- **Robotics Lab**: Use and evaluate cutting edge robotic interfaces
- **BioPsych Lab**: Dissect sheep brains and eyes
- **Biomechanics Lab**: Analyze physical movements via force plate and motion capture

AIADs
Every summer, Cadets travel the globe and make a difference working side-by-side with industry professionals at places like:
- NASA, Mountain View, CA
- Walter Reed, Washington, DC
- HRED, Aberdeen, MD
- USC’s ICT, Los Angeles, CA
- And International Locations: Australia, Sweden, Australia, and Israel

For more information, contact Engineering Psychology Faculty, Room TH267

<table>
<thead>
<tr>
<th>LTC Lolita Burrell</th>
<th>(845) 938-5640</th>
</tr>
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<tbody>
<tr>
<td>Dr. Enika Robins</td>
<td>(845) 938-5892</td>
</tr>
<tr>
<td>Dr. Michael Matthew</td>
<td>(845) 938-3596</td>
</tr>
<tr>
<td>COL James Nuss</td>
<td>(845) 938-0239</td>
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<tr>
<td>MAJ Adam Werner</td>
<td>(845) 938-5635</td>
</tr>
<tr>
<td>Dr. Aryn Pyke</td>
<td>(845) 938-0066</td>
</tr>
<tr>
<td>Dr. Michael Boyle</td>
<td>(845) 938-5643</td>
</tr>
<tr>
<td>Dr. Rob Thomson</td>
<td>(845) 938-5662</td>
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Complementary Support Courses
Within the program, you have 3 Complementary Support Courses (CSCs), or electives, that you can choose. E-Psych offers 50 elective classes across 15 different majors. E-Psych’s application across disciplines gives you unparalleled flexibility and academic freedom. Here are some classes you could take:
- **LG371**: Intermediate German
- **PL471**: Leadership in Combat
- **MG379**: Leading Teams
- **ME370**: Computer Aided Design
- **SE485**: Combat Modeling

Semester Abroad
Going abroad to another service academy or country is one of the most developmental opportunities you have at West Point. Within E-Psych we will work with you to go abroad, typically 2nd semester of your Cow year.

Previously, we have sent Cadets to Brazil, Germany, the Air Force Academy, the Naval Academy, France, Portugal, China, Morocco, and Mexico.

Honors Program
To be eligible for the E-Psych Honors Program, Cadets must have a 3.0 cumulative GPA and a 3.5 GPA in the major at the end of their second class year. You will have an opportunity to work 1-on-1 with faculty executing an independent study. In the past, Cadets have published their research in peer-reviewed journals.

**Advanced Individual Study (Choose Both)**
- **PL497**: Seminar in Engineering Psychology
- **PL498**: Adv. Study in Engineering Psychology
Organizational Management and Decision Making

Why Management?

Our Army operates in a complex, ambiguous, and volatile global environment. More than ever, we need leaders capable of accomplishing our challenging missions and taking great care of our Soldiers and their families in an era of constrained resources.

While you should be focused on developing your leadership skills in order to prepare for your future roles as platoon leaders in combat, you will also need a great deal of managerial skill to succeed, both in the Army and out.

How does the training that prepares your unit for operational deployment and combat get planned, resourced, and assessed? How will you maintain and account for the equipment that your unit relies on to perform its mission?

Without the ability to recognize and effectively manage critical issues like these, the time you have available to properly lead and take care of your Soldiers will disappear.

The Management Major prepares you to lead efficient and effective organizations by developing critical managerial skills. You will study concepts and frameworks that will apply throughout your career in the Army and beyond.

We bring theory to life using real-world examples, analyzing situations faced by managers in organizations from Google to Under Armour to USMA. Our hope is to inspire in you a curiosity about how things run, and arm you with tools necessary to lead an efficient and effective organization.

Do you have the skills necessary to make a difference in the Army... and beyond?

The Management faculty is committed to your education and development. As a Management major, you can expect a level of mentorship and individualized guidance that cannot be found in any other management program in the nation.

You are our number one priority.

Click here to learn more about our major!

Department of Behavioral Sciences and Leadership
“Building Stronger Leaders”

To learn more about the Management major, contact us!

Dr. James Cornwell, james.cornwell@westpoint.edu
COL Archie Bates, archie.bates@westpoint.edu
MAJ Kevin Kumlien, kevin.kumlien@westpoint.edu
Dr. Eric Lin, eric.lin@usma.edu
MAJ Travis Cyphers, travis.cyphers@westpoint.edu
CPT(P) J. J. Morgan, jonathon.morgan@westpoint.edu
MAJ T. Jordan Terry, thomas.terry@westpoint.edu
Dr. Lissa Young, lissa.young@usma.edu

Benchmarked For Excellence

Compare to the #1 US undergraduate business program

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<tr>
<th>Management Subjects</th>
<th>USMA Management</th>
<th>U Penn</th>
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<tr>
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<td>Human Resources</td>
<td>MG382 Elective</td>
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<td>Marketing</td>
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<td>Accounting</td>
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<tr>
<td>Operations</td>
<td>MG420 Core</td>
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</table>

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MAJ Kevin Kumlien, kevin.kumlien@westpoint.edu
Dr. Eric Lin, eric.lin@usma.edu
MAJ Travis Cyphers, travis.cyphers@westpoint.edu
CPT(P) J. J. Morgan, jonathon.morgan@westpoint.edu
MAJ T. Jordan Terry, thomas.terry@westpoint.edu
Dr. Lissa Young, lissa.young@usma.edu

Omicron Delta Kappa
The National Leadership Honor Society

Cadets who attain a 3.0 CQPA are eligible to be inducted into Omicron Delta Kappa Society (ODK), The National Leadership Honor Society. Each year ODK participates in a number of developmental trips and leadership events including the S&P 500 and elite business schools. ODK also provides cadet leadership for USMA’s annual involvement in Toys for Tots and the Special Olympics.

Click here to learn more about our major!
Entrepreneurial Leadership Program

Build real world business plans either of your own choosing or in conjunction with cadet researchers in other departments. Under careful faculty guidance, you will develop comprehensive business plans and compete in the Mid-Hudson Valley Regional Business Plan Competition.

E N R I C H I N G A I A D S

The Management major coordinates over 30 AIADs each year, including opportunities both in the US and abroad.

Past AIADs include:
- Beijing International MBA Program
  - Beijing, China
- Banyan Tree Holdings
  - Danang, Vietnam
- Chipotle Mexican Grill
  - Denver, CO
- Wal-Mart National Headquarters
  - Bentonville, AR
- IESE Business School
  - Madrid, Spain
- Team RWB
  - Tampa, FL
- Starbucks
  - Seattle, WA
- Inst. for Creative Technology
  - Los Angeles, CA
- ESPN
  - Bristol, CT
- Pretoria University MBA Program
  - South Africa
- General Electric
  - Fairfield, CT
- Google
  - San Francisco, CA
- EMOR
  - Norristown, PA

Course Requirements

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  - Madrid, Spain
- Team RWB
  - Tampa, FL
- Starbucks
  - Seattle, WA
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  - Los Angeles, CA
- ESPN
  - Bristol, CT
- Pretoria University MBA Program
  - South Africa
- General Electric
  - Fairfield, CT
- Google
  - San Francisco, CA
- EMOR
  - Norristown, PA

**Course Requirements**

**Introduction to Mgmt (MG381)**
Building Teams, Operating Organizations, Management Fundamentals

**Human Resource Mgmt (MG382)**
Acquiring, Developing, Compensating, and Managing Human Resources

**Marketing (MG380)**
Marketing Principles, Brand Development, Strategic Communication

**Fundamentals of Accounting (MG395)**
Business Activities, Transaction Analysis, Financial Statement Analysis

**Managerial Finance (MG410)**
Time Value of Money, Risk and Return, Valuation, Financial Analysis

**Leading Teams (MG379)**
Small Group Dynamics, High Performance Work Teams, Maximizing Team Effectiveness

**Strategic Management (MG421)**
Capstone: Application of all disciplines to achieve organizational success.

**TAILOR YOUR EDUCATION TO YOUR INTERESTS BY CHOOSING FROM 1 OF 3 MANAGEMENT TRACKS**

**Business Management:**
- Operations Management
- Entrepreneurship
- Leading Changing Organizations
- Negotiations for Leaders
- Calculus II
- AND two of four:
  - Entrepreneurship
  - Leading Changing Organizations
  - Negotiations for Leaders
  - Calculus II

**Social Enterprise:**
- Elective concentration:
  - Entrepreneurship
  - Leading Changing Organizations
  - Negotiations for Leaders

**Public Administration:**
- Choose three of five:
  - Entrepreneurship
  - Leading Changing Organizations
  - Negotiations for Leaders
  - Operations Management
  - Calculus II

**The Management Major Is...**

**Challenging**
"The Management instructors are very intelligent and are able to push the students to learn in and out of the classroom."

**Interdisciplinary**
"From community service to broadening trip sections to real life management challenges, the Management major provides it all."

**Relevant**
"The courses in the management major are some of the most applicable skills I learned while at the Academy - to both my personal life and my career as an Army officer alike."
The Department of Behavioral Sciences & Leadership

**Majoring in Psychology**

**Why major in Psychology?**

As an officer in the United States Army, your most critical asset to achieve success is not your equipment, or your knowledge about tactics, or the systems that you manage...it is the people for which you are responsible. The Army is a people-driven organization, where no one does anything by themselves and the unit succeeds or fails as a collective.

By majoring in Psychology and developing your own deep understanding of human behavior, you gain an edge in the most important domain on the battlefield: the human dimension. You will learn how to motivate, influence, and develop others through courses like Foundational Counseling & Social Psychology. You will learn valuable skills to apply in both Army and research contexts in courses like Research Methods and Experimental Applications in Psychology.

These skills will pay dividends both in the Army and beyond. Regardless of the length of your Army career, as a USMA graduate in the private sector you will likely still be managing or leading others toward a shared goal...why not do everything you can now to be the best you can be at it!?

For additional information, please contact any of the following:

Dr. Marjorie Carroll, 274F Thayer, 938-5642, marjorie.carroll@westpoint.edu
COL Vic Deekens, 274G Thayer, 938-1381, victor.deekens@westpoint.edu
Dr. Lisa Korenman, 274H Thayer, 938-4806, lisa.korenman@westpoint.edu
CPT Chris Frasse, 274E Thayer, 938-0702, christopher.frasse@westpoint.edu
CPT Jeremiah Powers, 274C, Thayer, 938-7169, Jeremiah.powers@westpoint.edu
Majoring in Psychology

Psychology majors choose between two different tracks:

- **“Applied General Psychology”** is focused on applying knowledge of psychology to improve the development, performance, and well-being of individuals (Soldiers).

- **“Organizational Psychology and Leadership”** is focused on applying knowledge of psychology to select and develop leaders, and improve the effectiveness of groups, teams, and organizations.

### Core Courses for both the Applied and Organizational track

- **PL361** Research Methods
- **PL383** Social Psychology
- **PL387** Foundations of Counseling
- **PL462** Advanced Research Methods
- **PL488B** Psychology Colloquium

### Applied track

Take the following 3 courses:

- **PL250**: Neurocognitive Foundations of Behavior
- **PL373**: Life-Cycle Human Development
- **PL376**: Abnormal Psychology

### Depth of Discipline courses

Choose 2 of the following:

- **PL360**: Psychology of Elite Performance
- **PL390**: Biological Psychology
- **PL391**: Sensation/Perception/Psychophysics
- **PL392**: Cognitive Psychology
- **PL471**: Leadership in Combat
- **PL470**: Special Topics in BS&L

For those in the Applied track:

- **PL398**: Leadership Theory & Development
- **MG379**: Leading Teams
- **PL479**: Leading Organizations through Change

### Organizational track

Take the following 3 courses:

- **PL398**: Leadership Theory & Development
- **MG379**: Leading Teams
- **PL479**: Leading Organizations through Change

### Depth of discipline and complimentary support courses for both tracks

### Complimentary Support Courses

Choose 3 Courses from an expansive menu that includes the following topics:

- Medicine
- Law & Society
- Peace & Conflict
- Sex & Gender in the Military
- Human Performance
- Philosophy
- Culture
- Mathematics
- Cyber psychology
- Business

We offer a pre-med track for those interested in medical school!
The Honors Program for Sociology majors consists of a two-course sequence in areas that they select. In these projects, cadets are challenged to integrate the theories and skills learned in previous courses and to make an innovative contribution to the discipline’s body of knowledge. Minimum which cadets will complete a thesis in addition to the courses required for the major. Cadets will conduct a research project that includes original investigation in GPA of 3.00 required.

The Sociology Program sets the standard for developing inclusive leaders of character.

For More Information

Contact our Sociology Faculty
COL Remi Hajjar remi.hajjar@westpoint.edu
Dr. Morten Ender morten.ender@westpoint.edu
MAJ Bryan Williams bryan.Williams@westpoint.edu
MAJ Jess Dawson Jessica.dawson@westpoint.edu
CPT(P) Lily Garcia Lidilia.Garcia@westpoint.edu

Room 282 Thayer Hall
(845) 938-5031
www.dean.usma.edu/bsl

HOPE Count in NYC: Counting the Homeless

“Walking around New York City in the freezing cold was a humbling experience. I cannot imagine what it would be like to have to live out in those conditions night upon night.” –cadet feedback

CDT Care Kehn ('18) Fulbright Scholarship Winner inducted by BG Jebb into the Psi Kappa Psi West Point Honors Society

Sociology Honors Program

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<tr>
<th>Sociology Subjects</th>
<th>USMA</th>
<th>University of Maryland</th>
<th>Stanford University</th>
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<tr>
<td>Armed Forces and Society</td>
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<td>Marriage and the Family</td>
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<tr>
<td>Criminology &amp; Crim. Just. Sys</td>
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<tr>
<td>Research Methods</td>
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To be an effective leader, you must understand your Soldiers and our society. The men and women you will lead are drawn from many different cultures, races, and ethnicities, they have varied beliefs and values, and institutions of foreign societies. Sociology prepares you to succeed as a leader.

- Prepares officers to become effective cross-cultural and inclusive leaders.
- The sociology major is one of the most flexible and broadly encompassing programs at the Academy.
- Courses let you study criminology, militaries, cultures and many other relevant societal topics.
- Explore how understanding military families can make you a better leader.
- Watch films such as *Barbershop*, *Elysium*, *Fight Club*, & *Good Will Hunting* among many others to understand and apply your sociological imagination.
- Find out how people become criminals and how society deals with them in the Criminology course.


**PL377 Social Inequality**

“This experience showed me that the sense of family is not just something that the major or West Point offers but rather it is fostered by the study of Sociology itself. It was so encouraging to see the Sociology community critique, mold, challenge, and raise each other.”

—Sociology Major
**Department of Behavioral Sciences & Leadership**

**Minor in Diversity & Inclusion Studies**

**Why Study Diversity & Inclusion?**

The Diversity and Inclusion Studies Minor (DISM) exposes cadets to varied perspectives and methodologies for understanding and studying people. Moreover, the DISM at West Point offers cadets a framework for critically and creatively thinking about the broader impact of diversity and inclusion at the individual, organizational, societal, and global levels. It also provides our cadets opportunities to pursue diversity and inclusion in intra-, multi-, and inter-disciplinary ways.

**What Will I Learn?**

- Understand a broad range of methodologies for and theories of the critical study of diversity and inclusion, including its changing permutations in varied historical and social contexts.
- Develop an understanding of difference and empathy for others.
- Conduct directed research pertinent to the core theoretical, legal, literary, geographical, historical, social, psychological, environmental, and/or policy topics related to diversity and inclusion.
- Identify and critically assess explanations for construction of specific categories/groups such as sex/gender; race/ethnicity/nation; socio-economic class; religious affiliation; age; (dis)ability; sexual orientation; and cultures. Critically analyze the relation between constructed groups and access to power.
- Describe the various ways in which different types of social actors have experienced diversity and inclusion over the course of history; explain and critically analyze the causes of their successes and failures.

**What Do We Know?**

The ability to lead in today’s Army requires an understanding of the diverse nature of American and coalition soldiers and civilians as well as the complexity of issues associated with different groups, races, ethnicities, cultures, religions, and social classes, among many other demographic factors associated with diversity. West Point graduates must be well-prepared as possible to lead diverse teams and tackle complex problems.

Building Strong Leaders

[http://www.usma.edu/bsl](http://www.usma.edu/bsl)
Department of Behavioral Sciences & Leadership
Minor in Diversity & Inclusion Studies

**Essential Courses**

(Choose 2 of 3)
- PL377: Social Inequality
- SS392: The Politics of Race, Gender & Sex
- EN352: Power and Difference

(Choose 1 of 4)
- HI461: Sex & Civilization
- HI463: Race, Ethnicity, Nation
- HI391: World Religions
- HI398: Society and Culture in American History

**Elective Courses**

2 of 42 Free Electives from DISM-designated courses in Sociology, History, English, Philosophy, Psychology, Geography, Law, Foreign Languages, and Social Sciences. including PL350: Military Leadership which would also count towards your PL300 requirement. Inclusive leaders effectively lead diverse teams by creating an environment where all members of the team feel respected for who they are, and know their lived experiences and contributions are valued.

Building Strong Leaders
http://www.usma.edu/bsl
Chemistry & Life Sciences (CLS)
Chemistry Major

Chemistry is the branch of sciences that studies the composition, structure, properties, changes and interactions of matter. Therefore, it is truly the central science and underpins much of the efforts of scientists and engineers to improve life for humankind.

Chemistry Program Goals

- Use information resources to gather, organize, and understand scientific material.
- Design and execute experiments to address a problem or question.
- Analyze and assess scientific data gathered in the laboratory.
- Effectively and clearly communicate scientific information in written and oral form to a variety of audiences.
- Understand the applications of chemistry in the Army and society.
- Recognize relationships between the properties of a substance, its molecular structure, and its reactivity.
- Understand and apply the physical concepts of chemistry.

ACS Certified Degree Program

The Chemistry Major provides an opportunity to earn an American Chemical Society (ACS) Certified Degree in addition to the baseline major. In order to receive an ACS Certified Degree, a Cadet must complete the 11 baseline Chemistry Major courses and a minimum of 4.5 credit hours of individual research in any combination of the research courses.

Honors Program

The Chemistry Major also offers an Honors Program in addition to the baseline and ACS Certified Degree. To receive a Chemistry Major with Honors degree, a Cadet must complete the ACS Certified Degree requirements and:
- CH489 and CH490 (Individual Research I and II)
- Attain a GPA ≥ 3.0 in the 26 core academic program courses and 3-course engineering sequence
- Attain a GPA > 3.5 in the 13 chemistry program courses
AIAD Opportunities

The Advanced Individual Academic Development (AIAD) program allows Cadets to participate in a variety of summer enrichment opportunities that broaden their academic experience. The following are examples of organizations that support AIAD opportunities:

- Army Research Laboratory, Aberdeen Proving Ground and Adelphi, MD
- Edgewood Chemical and Biological Center, MD
- Picatinny Arsenal, NJ
- Walter Reed Army Medical Center, MD
- The Mint, West Point, NY
- U.S. Department of Agriculture, Washington, D.C.

Required Courses

CH371 Introduction to Analytical Chemistry:
The course provides an overview of contemporary analytical techniques with a focus on fundamental concepts. Topics include complexometric titration, acid-base equilibria, separations, redox potentials, electrochemistry, and spectroscopy.

CH383/384 Organic Chemistry:
These courses focus on the relationship between chemical structure and the physical and chemical properties of molecules, to include relationships between free energy changes and equilibria, and between activation energy and rate of reaction. Reaction mechanisms and relationships between mechanisms, least energy path, intermediates, and transition states are also explored.

CH471 Polymer Chemistry:
This course is an introduction to macromolecules and their properties. Topics include morphology, methods of polymerization and copolymerization, characterization, and testing.

CH472 Inorganic Chemistry:
This course provides an in-depth study of main group and transition metal elements and their compounds, to include an emphasis on chemical bonding, and atomic and molecular structures that allow for a breadth of applications.

CH473 Biochemistry:
This course focuses on biochemical systems at the molecular level with emphasis on structure-function relationships, metabolism, and regulation of systems and processes.

CH474 Instrumental Methods of Analysis:
This is a laboratory-based course designed to develop theoretical understanding and proficiency in the selection and use of modern instrumental methods of chemical analysis.

CH481 Physical Chemistry I:
This course focuses on chemical thermodynamics with emphasis on chemical equilibrium, chemical kinetics, and intermolecular interactions. Topics include properties of real gases, kinetic theory of gases, laws of thermodynamics, diffusion, rates of reactions, and molecular reaction dynamics.

CH482 Physical Chemistry II:
This course builds on the concepts covered in CH481 through a study of the quantum mechanics of atoms and molecules, their interaction with radiation, and statistical thermodynamics.

CH487 Advanced Chemistry Laboratory:
This is an integrative laboratory experience in which students will further develop their knowledge and understanding of organic and inorganic syntheses, quantitative and qualitative instrumental analyses, and applications of physical chemistry principles pertaining to molecular structure and kinetics. Students will develop and conduct independent projects that involve synthesis and characterization techniques based on their collective classroom and laboratory experiences. Students will present the outcome of their studies in a scientific presentation.

For more information:
COL Chi Nguyen or Dr. Eileen Kowalski
845-938-4983 845-938-0203
Department of Chemistry and Life Science
Bartlett Hall, Room 430
West Point, NY 10996
845-938-0203/4983
Life Scientists study the structure and processes of living organisms through unifying principles of: cell theory, evolution, genetics, and homeostasis.

Military Applications of Life Science. The most important “system” in the Army is the human Soldier. Because the Soldier is a biological system, life science, biotechnology, and medicine offer unique potential for enhancing the performance of this most complex, critical, and costly of the Army’s systems.

Careers in Life Science. We are a group who solve complex, often ill-defined, problems. Whether you are primarily interested in a career in medicine, research, or leadership within the Army, our majors do all of these. There are multiple opportunities available within many branches for life scientists to apply technical expertise.

Teaching Through Research. We offer research experiences in multiple science disciplines based on the expertise of our civilian and military faculty. These courses can begin as early as plebe year and continue each semester.

Success of our Life Scientists. Our cadets have proven success with National Scholarships, Fellowships, and Medical School Admission. We commission Leaders who serve at all echelons of the Army.
Medical School
Our cadets are very successful in applying for medical school. Whether your pursue a career in medicine or expand on concepts within the discipline as a future Army Officer, the embedded coursework will meet all medical school pre-requisites and provide training in the development of skill sets which can be applied at either destination. We welcome those eager to learn critical analysis skill and who enjoy solving problems.

AIADs
We offer Individual Academic Development opportunities across the world. Whether you desire research experience with National Laboratories, DoD research facilities, Physician Shadowing, or Coalition Partners, we have a variety of experiences.

Research
We build upon a diverse set of faculty expertise to offer options across the molecular, biomechanical, and cellular perspectives, to name a few. Cadets engage in hands-on applications of cutting edge science and have a proven record in national presentations and publications. Contact us to learn more about your options.

For more information visit the USMA CLS page: https://collab.westpoint.edu/chem/default.aspx

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| Research  | CH387         | CH390          | CH391         | CH392         | CH489         | CH490         |
| (optional)Honors
| Research  | CH389         | CH390          | CH391         | CH392         | CH489         | CH490         |
| (optional)Honors
| Research  | CH289         | CH290          | CH389         | CH390         | CH489         | CH490         |
| (optional)Honors
| Research  | CH375 Advanced Biology | CH383 Organic Chemistry I | CH384 Organic Chemistry II | CH385 Introduction to Cell Biology | CH387 Human Physiology | CH388 Genetics |
| Electives (2): | CH362 Mass and Energy Balances | CH364 Chemical Reaction Engineering | CH399 Special Topics in Life Science | CH376 Microscopy (Fall) | CH486 Neurobiology (Fall) | CH460 Human Anatomy (Spring) |
| Electives (2): | CH486 Neurobiology (Fall) | CH460 Human Anatomy (Spring) | CH499 Special Topics in Life Science | CH499 Special Topics in Life Science | CH499 Special Topics in Life Science | CH499 Special Topics in Life Science |
| Research (optional): | CH289/290 | CH389/390 | CH489/490 | CH489/490 | CH489/490 | CH489/490 |

Curriculum. A Life Science Major must complete 40 courses: 27 core courses, including an engineering sequence, and 11 life science courses (9 required + 2 electives).

Independent Research. These immersive experiences, as early as plebe year, partner cadets with faculty to engage in contemporary applications of course content.
Chemical engineers deal with the behavior of chemicals and energy. They design, operate, maintain, and troubleshoot processes that convert raw materials into useful products, or that convert one type of chemical product into another. Chemical engineers employ mathematics, chemistry, physics, biology, and engineering knowledge to solve technical problems.

Chemical engineers are responsible for design and control of large-scale chemical manufacturing plants for the production of basic chemicals, plastics, and fibers. Chemical engineers are also involved in many other diverse, but related, areas. Examples include (but are not limited to) food and fertilizer production, synthesis of electronic materials (polymers, ceramics, and semiconductors, for example), as well as biochemicals and pharmaceuticals. A technical degree in chemical engineering, along with the leadership skills you acquire as a military officer will lead you to become highly marketable after your military career.

Our goal is to develop cadets with a firm foundation in the fundamentals of engineering, physical sciences, investigative techniques, and problem solving skills. We achieve this goal through a rigorous academic program, small classes, and a robust laboratory program. Typical classes will generally have 8-16 cadets, always emphasize cadet preparation, and focus on problem solving.

The department has fully-supported modern computational tools and analytical instruments dedicated to cadet research. Cadets may pursue summer AIAD opportunities at various DoD and governmental laboratories. Cadets can also join our very active student chapter of the America Institute of Chemical Engineers (AIChE).
Choose 3 Electives!

Chemical Engineering

For more information visit the USMA Chemical Engineering website: https://collab.westpoint.edu/chem/CHEMENG/MainPage/ChEng.html

15 Required Courses

**Mass and Energy Balances (CH362):**
Introduction to chemical engineering calculations.

**Vector Calculus and Introduction to Partial Differential Equations (MA366):**
Mathematical techniques for the study of chemical engineering electives.

**Organic Chemistry I (CH383):**
Introduction to reaction mechanisms and structure-function relationships in organic molecules.

**Fundamentals of Electrical Engineering (EE301):**
Introduces electrical circuit theory and analysis.

**Thermal-Fluid Systems I and II (MC311 & MC312):**
Integrated study of thermodynamics and fluid systems.

**Chemical Reaction Engineering (CH364):**
Teaches selection, design, and operation of chemical reactors.

**Introduction to Automatic Process Control (CH367):**
Introduction to dynamic modeling and control of engineering linear systems.

**Chemical Engineering Thermodynamics (CH365):**
Expands on the specific thermodynamic properties of chemical reactions.

**Chemical Engineering Laboratory (CH459):**
Provides laboratory experience in operating large chemical processes.

**Heat and Mass Transfer (CH485):**
Introduces the mathematical modeling of heat and mass movement.

**Chemical Engineering Process Design (CH402):**
Introduction to the concept of chemical processes and design.

**Chemical Engineering Seminar (CH400):**
Helps cadets prepare for the FE Exam and the practice of chemical engineering.

The Fundamentals of Engineering Exam (FEE) is a program requirement for all Chemical Engineering majors.

Materials Engineering
- MC364 Mechanics of Materials
- MC380 Engineering Materials
- Open Engineering Elective

Industrial Engineering
- SE301 Fnds of Eng. Design & Sys Mngmnt
- EM411 Project Management
- EM420 Production Ops Mngmnt

Decision Analysis
- SE301 Foundations of Eng. Design & Systems Management
- EM481 Systems Simulation
- SM484 System Dynamic Sim

Advanced Control Systems
- EE360 Digital Computer Logic
- SM484 System Dynamic Sim
- XE475 Mechatronics

Energy Conversion Systems
- EE377 Electrical Power Gen
- ME472 Energy Conversion Sys
- ME480 Heat Transfer

Power Systems
- MC306 Dynamics
- ME491 Mechanical Power Plants
- EE377 Electrical Power Gen

Nuclear Energy
- NE300 Fund of Nuclear Engr
- NE350 Radiological Engr Design
- NE450 Nuclear Weapons Effects

Other engineering electives possible with the approval of the program director.

CH290/389/390/489/490
Research courses available with advisor approval.

AIAD Opportunities

- Bio-electrochemical and Systems Biology Research at ARL
- Synthetic Biomaterials Research at ARL
- Check on Hopper 2: Color Check
- Process Development Uniformed Color Company
- Chemical Process Engineering in Polymer Science - Southern Polymer
- Technology and Automation in Support of Sales at Southern Polymer
- Biosensor Development with USCOE
- Waste to Energy – Rotary Kiln Gas Technology
- Improvised Armaments
- Development of Flame Retardant Compounds UL 5V
- Value Stream Management – Arden Processes
- Renewable Energy Group Heating Oil Project
- Renewable Energy Group CEO Shadow/Aide de Camp
- Evaluation of FEM HMX in LX-14 Explosive Composition
- PEO AMMO - Ammunition Facility Production Modernization
- Energy Industry Ops, Bernt GmbH

The Fundamentals of Engineering Exam (FEE) is a program requirement for all Chemical Engineering majors.
Civil & Mechanical Engineering (CME)
Civil Engineering Major (CVN2)

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<td>MBS XXX Math/Science</td>
<td>CE XXX Elective 3</td>
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Electives

Math and Basic Science Electives: Must take one of the following courses

Pre-requisites (*Co-requisites)

- CH 102 CHEMISTRY II
  - CH 101/151
- CH 275 BIOLOGY
  - CH 101/151
- MA 371 LINEAR ALGEBRA
  - MA 205/255
- MA 376 APPLIED STATISTICS
  - MA 206 (SE 375 disqualifies)
- MA 386 INTRO TO NUMERICAL ANALYSIS
  - IT 105, MA 255

Civil Engineering Electives: Must choose two of the following courses (three electives required to graduate with honors)

Pre-requisites (*Co-requisites)

- CE 389 INDEPENDENT STUDY IN CE (3 cr)
  - Instructor Approval
- CE 389A INDEPENDENT STUDY IN CE (3 cr)
  - CE 389
- CE 399 CIVIL ENG P/AC FIELD ENG (FIELD ENGR READINESS LAB, USAFA)
  - AARD
- CE 472 ADV SOIL MECH/FLUID ENG
  - CE 371
- CE 489 ADV ENGR STUDY CIVIL ENG
  - Instructor Approval
- CE 489A ADV ENGR STUDY CIVIL ENG
  - CE 489
- CE 490 TOPICS IN CIVIL ENGINEERING
  - Instructor Approval
- CE 491 ADV STRUCTURAL ANALYSIS
  - CE 403
- CE 495 TRANSPORTATION ENGINEERING
  - CE 371, CE 380
- EVS 380 SURVEYING
  - None
- EVS 385 INTRO TO ENVIRONMENTAL ENGINEERING
  - CH 101/151, MA 205/255, PH 205/255 (EV 350 disqualifies)
- EVS 394 HYDROLOGY/HYDRAULIC SYSTEMS
  - EV 203, MA 205/255, MA 206
- EVS 398 GEOGRAPHY/GEOPHYSICAL SYSTEMS
  - EV 203
- EVS 401 PHYS & CHEM TREATMENT
  - XS 391, MA 311
- EVS 481 WATER RESOURCES PLAN & DESIGN
  - PH 201/251, PH 205/255, MC 300
- MC 306 DYNAMICS
  - MC 311
- MC 312 THERMO-FLUIDS II
  - CH 101/152, MC 364
- MC 370 ENGINEERING MATHEMATICS
  - MC 364
- MC 486 VIBRATION ENGINEERING
  - MC 364/365, MC 365* (MC 365 disqualifies)
- ME 370 COMPUTER AIDED DESIGN
  - MC 205/255, MA 201
- ME 472 ENERGY CONVERSION SYSTEMS
  - MC 311
- ME 491 MECHANICAL POWER PLANTS
  - MC 311, MC 312
- ME 490 SUSTAINABILITY ENGINEERING
  - MC 311

Course pre-requisites and terms offered as of 28 AUG 18

Studying Civil Engineering is excellent preparation for service in any branch of the Army and the best path for those interested in branching Engineers. Engineer officer assignments require expertise in combat engineering, facilities engineering, and construction management. A typical career begins with duty as an engineer platoon leader, provides opportunities for advanced civil and military schooling, and proceeds to higher levels of responsibility. Positions include command of engineer units from company to brigade level, staff duty at all levels of the Army, instructing at USMA or other schools, command of a USACE Engineer District, and many other possibilities!
WHERE WILL A DEGREE IN MECHANICAL ENGINEERING TAKE YOU?

#6 in Mechanical
At schools where doctorate not offered
A NATIONALLY RANKED PROGRAM!
DESIGN DEVICES AND SYSTEMS TO IMPROVE PEOPLE’S LIVES

Materials & Manufacturing

Thermal – Fluids

Aeronautical Systems

Mechatronics & Dynamic Systems

Design & Professional Topics

Auto & Weapons
MECH ENGINEERING HAS AWESOME AIADS/PROJECT OPPORTUNITIES!

In the Dept. of Mech Engineering you will work with industry leaders like...

NASA

MIT LINCOLN LABORATORY

GENERAL DYNAMICS

SIKORSKY

Tailor your degree from a choice of 23 different electives!
Cadets with a Mechanical Engineering background are in high demand by the Army and industry!

For more information on AIADS, Capstones, or where a degree in ME can take you

Contact Us

ME Program Director –
Dr. Rebecca Zifchock, rebecca.zifchock@westpoint.edu

ME Head DAC –
MAJ Nate Humbert, nathan.humbert@westpoint.edu

OR

Scan here to find out more about our program
Electrical Engineering & Computer Science (EECS)
Electrical Engineering

Without a doubt, the electronics revolution over the past few decades continues to significantly impact our daily lives. The advent of the integrated circuit and the microprocessor have made possible phenomenal advances in such varied fields as medicine, communications, manufacturing, computation, education, energy conversion, and weapons systems. Electrical engineers are at the forefront of this revolution, using the principles of physics, mathematics and the engineering sciences to develop new and innovative applications of electronics.

As students of electrical engineering you will develop a mastery of the fundamental elements of circuit theory, electromagnetic fields and waves, electronics, digital computer logic and electromechanical energy conversion. You will then study in even greater depth from the five military relevant depth areas:

- robotics
- communications
- opto-electronics
- alternative energy
- cyber engineering

Emphasis is placed on practical design, hands-on laboratory and computer experience, teamwork, and interdisciplinary projects.

Regardless of branch, officers are intimately involved with the myriad of electronic systems in military hardware. The courses in the electrical engineering curriculum are directly applicable to the Army you will lead.

Our Enemies are developing armed robots!! Will you be part of the solution!

The program also provides a sound basis for graduate studies in electrical engineering and several other related fields.

For more information contact Dr. Peter Hanlon: Peter.Hanlon@westpoint.edu

The Electrical Engineering Program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org
# 2024 Electrical Engineering Major

## Depth Options

### Sophomore Fall Semester
- MA 103 Calculus 4.5
- EN 101 Composition 3.0
- CH 101 Chemistry 4.0
- HI 100 Psychology 3.0

### Sophomore Spring Semester
- MA 104 Calculus 4.5
- EN 102 English 3.0
- PH 205 Physics 1 4.0
- LX 203 Language 1 4.0

### Junior Fall Semester
- MA 205 Calculus 2 4.0
- EE 302 Intro to EE 3.5
- EE 360 Dig Logic 3.5
- SS 201 Econ 3.0
- EE 307 Intrm’l Rel. 3.0

### Junior Spring Semester
- EE 362 Intro Electr 3.5
- MA 206 Prob & Stat 3.0
- EV 203 Terr. Anal. 3.0
- SS 202 Amer. Pol 3.0
- PH 206 Physics 2 4.0

### Senior Fall Semester
- EE 401 Integ Sys Des I 3.5
- EE 381 Sig & Sys 3.5
- EE 480 Fiber
- MA 364 Eng. Math 3.0
- EE 377 Power 3.0

### Senior Spring Semester
- EE 402 Integ Sys Des II 3.5
- EE 383 ElectroMag. 3.5
- EE 486 Solid State
- EE 375 Comp Arch 3.0
- EE 387 Embed Sys

### Core
- MA 104 Calculus 4.5
- EN 102 English 3.0
- CH 101 Chemistry 4.0
- HI 100 Psychology 3.0

### EE Core
- EE 205 Intro to EE 3.5
- EE 302 Intro to EE 3.5
- EE 360 Dig Logic 3.5
- SS 201 Econ 3.0
- SS 202 Amer. Pol 3.0

### Elective
- EE 362 Intro Electr 3.5
- EE 381 Sig & Sys 3.5
- EV 203 Terr. Anal. 3.0
- SS 202 Amer. Pol 3.0
- PH 206 Physics 2 4.0

### Engineering Breadth
- EE 377 Power
- EE 375 Comp Arch 3.0
- EE 375 Comp Arch 3.0
- EE 383 ElectroMag. 3.5
- MA 364 Eng. Math 3.0

## EE Major
- 41 courses
- ABET accredited
- Benchmarked

## EE Honors Major
- 42 courses
- Minimum GPA
  - 3.0 in Core
  - 3.5 in Major
- Research or engineering paper suitable for publication

## Alternative Energy
- XE 472 Controls
- EE 442 Fiber
- EE 486 Solid State

## Communications
- EE 477 Dig Com
- EE 480 Fiber
- EE 482 Wireless

## Cyber Engineering
- CY 300 Prog Fund
- CY 350 Net Eng Mgt
- CY 450 Cyber Sec.

## Opto Electronics
- EE 486 Solid State
- EE 480 Fiber
- EE 483 Photonics

## Robotics
- EE 477 Embed Sys
- EE 475 Mechatronics
- EE 477 Dig Com

---

EE 477 is a directed elective.
Computer Science Major

Study the theoretical and practical principles of computer programming and computer systems.

Graduating with Honors is very achievable by high-performing cadets (>3.5 in-major and 3.0 in Core courses), requiring only 1 extra course and a small Honors project. Most class year groups in recent years have seen cadets publishing academic research and successfully competing for scholarships.

Three threads, taken together....

Computer Science is a 41 course major, with 17 courses being CS-related. Curriculum is designed to remain relevant long after graduation. The major includes the Cyber Engineering Sequence and CY355.

CS majors complete many projects and have exciting opportunities with AIADs, cadet clubs, and other activities. The year-long capstone design project, culminating on Projects Day, is one exciting experience all CS majors undertake. CS cadets work in teams of 4-7 that include cadets in other majors.

Applications of computing

XE401 Integrative Systems Design I
XE402 Integrative Systems Design II
CS400 Professional Considerations
2 CS electives

Choices include:
- Artificial Intelligence
- Graphics
- Android Programming
- Digital Forensics
- Cyber Security Engineering
- Database Systems
- Embedded System Development
- User Interface Development
- Disruptive Innovations
- CS Independent Study

Programming & software design

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<tr>
<td>CS384</td>
<td>Data Structures</td>
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<td>CS403</td>
<td>Testing &amp; Development</td>
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Theoretical foundations

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<td>CS478</td>
<td>Programming Languages</td>
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<td>CS474</td>
<td>Computer Theory</td>
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<td>CS385</td>
<td>Algorithms</td>
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Math Elective

Systems fundamentals

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<td>EE360</td>
<td>Digital Logic</td>
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<tr>
<td>CS380</td>
<td>Computer Organization</td>
</tr>
<tr>
<td>CS484/CY350</td>
<td>Networking</td>
</tr>
<tr>
<td>CS481</td>
<td>Operating Systems</td>
</tr>
</tbody>
</table>

CS electives

Applications of computing

MA372 Discrete Math
CS478 Programming Languages
CS474 Computer Theory
CS385 Algorithms

Math Elective

For more information about the CS Major, talk to anyone in EECS or contact COL Mentis (alexander.mentis@westpoint.edu)
Why Computer Science?

Channel true creativity.
Designing high-quality computing solutions is a highly creative activity. Support creative work in many other fields. The best solutions in computing exhibit high levels of elegance and beauty.

Master complexity.
Build on mathematical foundations, to learn how to design efficient algorithms and determine kinds of problems solvable by computers. Solve deep, multi-dimensional problems that require imagination and interdisciplinary teams.

Blend with other disciplines.
A CS major will provide you with a foundation of knowledge, problem solving and logical thinking that will serve as a competitive advantage to you in your career, in whatever field you choose.

Be impactful on a team or individually.
Computing is often about being part of a team that requires people with many different kinds of skills. Yet there is also plenty of space for individual flair and imagination.

Learn attack and defense, then compete to win.
Hone cyber-related skills by learning networking and operating systems, reverse engineering, security, and digital forensics. Participate on the Competitive Cyber Team and win the Cyber Defense Exercise.

Learn some Greek.
For all $p, q \in Q$, all $Z \in \Gamma$, all $k \geq 1$, and all $w \in \Sigma^*$,

$$[p, Z, q] \xrightarrow{l^m} w \quad \text{iff} \quad (p, w, Z) \vdash^+ (q, \epsilon, \epsilon)$$

Impress everyone you know with notes from Computer Theory.

Be part of EECS—an awesome community!
It's hard to imagine a more supportive faculty to help you on your journey. We're basically a fun-loving bunch of geeks who are really eager to work with the next generation of technologists.

For more information about the CS Major, talk to anyone in EECS or contact COL Alexander Mentis.

Cool technologies are part of the job.
Wouldn't it be neat if you were actually completing classwork while gaming, working with graphics, virtual reality, robotics, social media, and mobile platforms, or hacking apps, and things like that?

Amazing AIAD experiences.

Learn some Greek.

Learn more programming.

So many lucrative career options.
Computing jobs are among the highest paid and job satisfaction. With more jobs than qualified people to fill them in the US, the projected growth rate is between 12% and 37% through 2022.

Computing impacts everything we do!
Computer technology is part of so much that touches our lives from the cars we drive, to the movies we watch, to the ways businesses and governments function.

Make a positive difference in the world.
Computing drives innovation in sciences and engineering (for example, environmental monitoring and the human genome project), entertainment, business, and education sections.

Lead in a highly complex technological environment.

Great fit with Cyber, Signal, and Intelligence.

For more information about the CS Major, talk to anyone in EECS or contact COL Alexander Mentis.
English & Philosophy (DEP)
Why Study Literature?

* The study of literature moves beyond simple awareness of other perspectives and equips students with the skills they need to engage with other cultures.

* The study of literature fosters essential leadership skills including critical thought, clear and persuasive communication, creativity, and ethical awareness.

* The major equips cadets to engage the world’s intellectual, moral, and emotional complexities with insight and the potential for empathy.

* Cadets will refine skills of critical analysis and creativity and enrich their imaginative capacities.

* Cadets will develop a broader and deeper understanding of the history of ideas, as well as the ways imaginative literature has influenced human behavior and shaped cultural norms.

* Cadets refine their listening, speaking, reading and writing skills in a variety of analytic and creative situations.
ENGLISH MAJOR

Required Courses:
EN300: Literary Methodologies
EN400: Senior Seminar in Advanced Literary Studies

Early and Late Period Surveys:
EN311: Ancient to Early Modern Literature
EN321: American Literature (up to 1865)
EN322: American Literature (post-1865)
EN331: British Literature (up to 1800)
EN332: British Literature (post-1800)
EN340: Contemporary Literature

Genre Courses:
EN361: Poetry
EN362: Film and Film Theory
EN363: The Novel
EN364: Drama

Special Topic Courses:
EN351: World Literature
EN352: Power and Difference
EN353: War Literature
EN354: Special Topics

Single Author Courses:
EN370: Shakespeare
EN371: Single Author Colloquium
"Philosophy" comes from Greek words meaning “love of wisdom.” Philosophy uses the tools of logic and reason to analyze the ways in which humans experience the world. It teaches critical thinking, close reading, clear writing, and logical analysis; it uses these to understand the language we use to describe the world, and our place within it. Different areas of philosophy are distinguished by the questions they ask. Do our senses accurately describe reality? What makes wrong actions wrong? How should we live? These are philosophical questions, and philosophy teaches the ways in which we might begin to answer them.

Students who learn philosophy get a great many benefits from doing so. The tools taught by philosophy are of great use in further education, and in employment. Despite the seemingly abstract nature of the questions philosophers ask, the tools philosophy teaches tend to be highly sought-after by employers. Philosophy students learn how to write clearly, and to read closely, with a critical eye; they are taught to spot bad reasoning, and how to avoid it in their writing and in their work. It is therefore not surprising that philosophy students have historically scored more highly on tests like the LSAT and GRE, on average, than almost any other discipline. Many of our students combine studying philosophy with studying other disciplines.

The most important reason to study philosophy is that it is of enormous and enduring interest. All of us have to answer, for ourselves, the questions asked by philosophers. In this department, students can learn how to ask the questions well, and how we might begin to develop responses. Philosophy is important, but it is also enormously enjoyable, and our faculty contains exceptional philosophers who make the process of learning about philosophy challenging and fun. Our faculty are committed to a participatory style of teaching, in which students are provided with the tools and the opportunity to develop and express their own philosophical views.
PHILOSOPHY MAJOR

Required Courses:
PY300: Philosophical Methods
PY305: Logical Reasoning
PY310: Reality and Knowledge or PY320: Ethics
PY400: Senior Seminar in Philosophy

Topical Courses:
PY325: Military Ethics
PY326: Cyber Ethics
PY329: Topics in Ethics
PY330: Political Philosophy
PY345: Philosophy of Religion
PY350: Philosophy of Science
PY355: Philosophy of Mind
PY395: Special Topics in Philosophy

Historical Courses:
PY360: Ancient Philosophy
PY369: Eastern Thought
PY370: 17th and 18th Century Philosophy
PY375: Kant and 19th Century Philosophy
PY380: 20th Century Philosophy
Department of English and Philosophy AIADs

Summer 2020

"We are such stuff. / As dreams are made on"

Ethics and Emerging Technology
A fourteen-day traveling seminar that moves from West Point to London to Oxford University. Explore the capabilities of artificial intelligence in terms of ethical decision-making. The focus will not be on human agents, but on the technology itself as the agent. Foster such autonomy in robots has largely been attempted through expressing rule-based ethical frameworks in programmable code. Yet, is there a moral calculus even possible? Candidates will engage with academics, professionals, and governmental experts on questions of robot ethics and the use of autonomous systems in current and future wars.

Writing Today
During their two-week trip to Washington, D.C., cadets research cutting-edge ideas about writing in seminars with faculty from elite peer institutions, including Johns Hopkins and the Naval Academy. They also discuss writing in a range of contexts with journalists from NPR and the Washington Post, with Smithsonian Museum and Folger Shakespeare Library curators, with Congressional representatives and aides, and with former CIA analysts and speechwriters in the White House and Pentagon.

Ethics and Literature in Prague
This one-week AIAD has a two-fold purpose: to focus on the morality surrounding why and how war should be waged, as well as to achieve a better understanding of how literature gives meaning to the human experience of war. Using 1940’s Czechoslovakia as our backdrop, we will focus on key historical examples from World War II, including the assassination of SS leader Reinhard Heydrich, to facilitate discussion and learning regarding the application of ethical theory to historic events.

Shakespeare and Power
This ten-day AIAD will specifically study tour history play as we focus on the different ways Shakespeare’s kings developed their leader identities. After study at USMA, cadets will move to the UK in order to view the works on stage. As readers and viewers, cadets will study the transformation of Prince Hal to King Henry V, the Machiavellian King Richard III, and the disconnected and ineffective leader, King Richard II. As a result of our trip and study, we will reach a deeper understanding of the potential destructive influence of power on leaders and the importance of leading with humility, competence, and character.

Thornwillow Institute Fellowship
The Thornwillow Institute is a non-profit run by a fine arts press located in Newburgh, New York. The business spans everything from concept and design, fine hand-pressed printing, and binding and distribution of fine editions of texts. The owner, Luke Petrella, is trying to reshape his section of Newburgh into a “maker space” for artists and other creatives and offered two fellowships to cadets to work with and in his enterprise, learning the printing trade and forging bonds between the Academy and Thornwillow Institute.

Culture, Narrative, & Civil-Military Ops
In this 9-day AIAD, cadets will begin to learn about Civil Affairs (CA) through immersion in a civil-military cooperation (CMIC) course in Motta di Livenza, Italy. They will further strengthen our military relationships with our NATO partners, explore the complex socio-historical landscape of Northern Italy through humanities and CA lens, and participate in actual training with the MN CMIC Group. This is a three-phase AIAD with online training and reading of representative critical theory after guestlecture, OCONUS travel and immersion, and a final phase where cadets will retell their immersion notes and publish a digital journal of their experiences.
Foreign Languages (DFL)
THIS IS WHERE YOUR LANGUAGE CAN TAKE YOU
“My decision to study Portuguese at the United States Military Academy had a tremendously positive impact on my career and helped me to achieve success.”

“While serving as the CEO of Anglo Ferrous, I required my American employees to take Portuguese lessons. This enhanced our work performance and ensured that we maintained a competitive advantage.”
Semester Abroad Programs

NORTHCOM
- Mexico (2)

SOUTHCOM
- Brazil (2)
- Chile

EUCOM
- Portugal (2)
- Spain
- France (3)
- Germany (2)
- Austria
- Latvia
- Ukraine/Moldova

AFRICOM
- Morocco (2)

CENTCOM
- Oman
- Jordan
- Tajikistan (2)
- Kazakhstan

PACOM
- China
- Taiwan
**Single Language Major** (10 Courses)
- The Nature of Modern Languages (LN380)
- Language & Culture Capstone Seminar (LN490)
- 8 Primary Language Courses
  - Intermediate Language Courses (371/372)
  - Civilizations (483/484) & Literature Courses (485/486/492)
  - Military Speaking and Reading (476)
  - Reading & Writing Through the Media (475)
- 4 Secondary Language Courses
  - Basic Language Courses (203/204)
  - Intermediate Language Courses (371/372)

**Dual Language Major** (12 Courses)
- The Nature of Modern Languages (LN380)
- Language & Culture Capstone Seminar (LN490)
- 6 Primary Language Courses
  - Intermediate Language Courses (371/372)
  - Civilizations & Literature
  - Military Readings
  - Media
- 4 Secondary Language Courses
  - Basic Language Courses (203/204)
  - Intermediate Language Courses (371/372)

**Foreign Area Studies Major** (10 Courses)
- 4 Primary Language Courses
  - 2 Intermediate (371/372)
  - 2 Advanced (475/476/483/484/485/486/492)
- 2 Geography Courses (EV365 / EV376 - Regional)
- 2 Regionally Focused Social Science Courses (SS383/SS366)
- 1 Regionally Focused History Course (HI339)
- 1 Capstone Course (LN490 / SS496 / EV382)

*Basic language (203/204) and Regional History (HI108) courses related to a cadet’s assigned language/region do not count toward the major.*
Double Majors

If you are interested in double majoring please contact the appropriate DAC below

- Arabic – MAJ Nowak  
  kathy.nowak@westpoint.edu

- Chinese – CPT Gardinier  
  jeremy.gardinier@westpoint.edu

- French – DR Praud  
  julia.praud@westpoint.edu

- German – CPT Means  
  laura.means@westpoint.edu

- Persian – Ms. Irani-Tehrani
  stephanie.irani-tehrani@westpoint.edu

- Portuguese – MAJ Isakson
  james.isakson@westpoint.edu

- Russian – Dr. Chenoweth
  carlotta.chenoweth@westpoint

- Spanish – CPT Arauz
  luis.arauz@westpoint.edu
Be an Arabic Language Major!

As an Arabic Language or Middle Eastern Studies major you will develop your linguistic interest and aptitude by broadening and deepening your mastery of the language and culture at the crossroads of yesterday, today and tomorrow. The Middle East is the cradle of civilization, the birthplace of the world’s three great monotheistic religions, and stands at the center of energy markets, the global economy, and geopolitics for the foreseeable future.

Immersion opportunities in the Arab world include:

• **Immersion** during spring break. Cadets have traveled to Marrakesh, Morocco, a wonderful central location to experience the Atlas Mountains, Sahara Desert, Atlantic coast – all important parts of the Moroccan cultural tapestry.

• **SAP** Starting in 19-2 we will have Cadets studying on the Semester Abroad Program in Jordan, Morocco, and Oman, and we are always looking for new educational opportunities for Cadets in the Arab world.

• **AIAD** intensive summer Arabic cultural-linguistic immersion. We offer programs of travel and study as well as service opportunities to put your values to work while you learn. Study Arabic abroad for academic credit!

• **Academic Award Available:** Honor Society of Phi Kappa Phi, Arabic Honors Programs, Graduation Honor Roll, and the BG Charles P. Stone’s Award for Excellence in Arabic.

Show off your regional expertise by competing as a delegate in the Model Arab League against other top universities, or explore Arab language and culture through films, cuisine, or trip sections.
What Are My Study Program Options?

Here are some sample 8TAPs for the Arabic Language major or the Middle Eastern Studies major, each consisting of 13 courses. 1- Take a double-language major with 15 courses, replacing one upper-level Arabic course with four courses in a second language. For Honors majors with thesis add an additional advanced level elective and LN488.

### Example: Arabic Language Major

<table>
<thead>
<tr>
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<th>2nd Class</th>
<th>1st Class</th>
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### Example: Dual Arabic and French Major

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### Example: Middle Eastern Studies Major

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<tr>
<td>H108*</td>
<td>LA203*</td>
<td>LA204*</td>
<td>LA371</td>
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</table>

*Basic language (203/204) and Regional History (H108) courses related to a cadet’s assigned language/region do not count toward the major.

### Courses in the Arabic Major

- **LA371**: Intensive Intermediate Arabic
- **LA372**: Arabic for Oral & Written Comm
- **LA470**: Special Topic in Arabic
- **LA472**: Colloquial Arabic
- **LA475**: Arabic RDG/WRTG thru Media
- **LA476**: Military SPKG/RDG
- **LA483**: Arab Civilization I
- **LA484**: Arab Civilization II
- **LA485**: Arabic Literature I
- **LA486**: Arabic Literature II
- **LA492**: Arabic Literature III
- **LN487**: Adv Ind Language Study
- **LN488**: Adv Ind Language Study
- **LN490**: Language & Culture CAP SEM
- **LN491-5**: Semester Abroad: ADV Language

*LN440 Arabic in Context may replace any LN or LA course.
Where will your language take you?

Hangzhou, China – Summer 2017

Beijing, China – Winter 2017

Hangzhou, China – Summer 2017

Badaling Great Wall, China – Spring 2015

Beijing, China – Fall 2017

Beijing, China – Winter 2017

Chinese Language / Chinese with Honors
East Asian Area Studies / Dual Language

選擇中文!
Be a Chinese Major!
What Can I Expect as a Chinese Major?

As a Chinese language major, you will develop a high level of Chinese language proficiency and cultural understanding. Your courses will focus on language, culture, and Chinese society. You may have the opportunity for academic travel to Chinese-speaking areas such as Taiwan, Singapore, or Mainland China.

SEMESTER ABROAD PROGRAM (SAP): Spend a semester studying Chinese and gaining priceless cultural insight in an immersion environment in Beijing, China or Taipei, Taiwan.

AIADs: Travel to Mainland China or Taiwan to study Chinese in an intensive summer language program while traveling to historic sites.

CHINESE LANGUAGE FORUM: Participate in weekly club activities; learn and experience Chinese culture through food, media and presentations; and socialize with other Chinese-language cadets.

ACADEMIC AWARDS AVAILABLE: Compete for the BG Charles J. Barrett Memorial Award for most outstanding cadet in language studies; the SGT Larry Morford Friendship Award for Chinese and Russian; the LTG Ying Hsing Wen Memorial Award for Chinese; and the Brigadier General Anthony J. Smith Award for excellence in foreign studies.

In addition to potential semesters abroad and AIADs to China, Taiwan, and other Chinese-speaking countries, Chinese majors also have the opportunity to put their language skills to use in world-impacting research on any number of available topics. Past Cadets conducted individual research at the Chinese Academy of Social Sciences in Beijing; interviewed Chinese colleagues in focus groups; and completed field research in Taiwan.

Opportunities for research and study abroad are numerous and can be individually-tailored to research interests. Research trips to conferences or other events during the semester (4-5 day trip sections) or over long breaks are also common.

You can choose from a Chinese Language Major, combine Chinese and another language in a Dual Language Major, or combine language and regional studies with an interdisciplinary East Asian Foreign Area Studies Major. Each of these options also has an honors program. Languages work well as part of a Double Major with another department. An East Asian Regional Studies Minor, comprising three language classes and two regional electives is also available.
Where will your language take you?

Étudiez le français!
Be a French Language Major!

French Language ~ French with Honors ~ European Area Studies ~ African Area Studies ~ Double Language
You can choose from a French Language Major, combine French and another language with a Dual Language Major, or combine the language and the region with an interdisciplinary European or African Studies Major. Each of these options can be taken as an honors program.

**What Can I Expect as a French Major?**

**Sample French-language 8TAP**

(LN380, LN490, 3xCSC, and 8 French)

**Sample Area Studies 8TAP (Europe)**

(LN380, LN490, EV365, EV386, SS366, SS377, 1xHistory, and 4 French)

**Sample Dual-Language 8TAP**

(French & Arabic)

(LN380, LN490, 3xCSC, 6 Primary Lang, and 4 Secondary)

**MIAD:** Train with French junior officers as they test their mettle at the French Airborne School or the grueling French Commando School!

**AIAD:** Study in an intensive summer language immersion program at the Center for French Language at the School of the Gendarmerie in Rochefort, France, or travel to francophone Africa.

**SEMESTER ABROAD PROGRAM (SAP):** Spend a semester studying French and truly experiencing the culture in an immersion environment in France. Attend universities in Lille, Lyon, or the Military Academy of Saint-Cyr as part of West Point’s oldest foreign exchange program. Many SAP attendees have the opportunity to conduct joint military training with select French units.

**FRENCH FORUM:** Participate in bi-weekly club activities, learn and experience francophone culture through food, media and instruction. Socialize with other French-speaking cadets. Taste and see French and francophone culture during seasonal trip sections to Montréal and Québec.

**ACADEMIC AWARDS AVAILABLE:** The Brigadier General Charles J. Barrett Memorial Award for most outstanding cadet in language studies, The Order of Lafayette Award for excellence in French, The Brigadier General Anthony J. Smith Award for excellence in foreign studies.
Where will your language take you?

Studieren Sie Deutsch!
Be a German Major!
GO ABROAD!
We want our German Majors to experience life in Germany and Austria. Each year we send at least 12 cadets on Summer AIADs and 12 cadets on Semesters Abroad.

As a German Language or Foreign Area Studies Europe major you will develop your linguistic and cultural abilities, while forming a solid foundation in the humanities. Germany is the most widely spoken language in Europe. Germany is the driving economic power for Europe and has a rich history of philosophy, psychology, and scientific innovation. Additionally, Germany is a long-term military partner and one of our closest allies.

Immersion opportunities in the German-speaking world include:

• **Spring Break Immersion**: Cadets have traveled to cities and regions in Germany such as Berlin, Dresden, Hamburg, and Munich, as well as Vienna, Salzburg, and the Alps in Austria. These trips also included visits to famous historical sites from the 16th - 20th Centuries.

• **SEP (Semester Exchange Program)**: The keystone of the exchange program is cooperation with the Universities of the Bundeswehr in Munich and Hamburg, and the Theresian Military Academy in Vienna. What separates the German program, however, is the reciprocal exchange that allows Cadets to form relationships while abroad, and then to continue them when German and Austrian students later spend a semester at USMA.

• **AIAD**: The German section offers the opportunity to spend three weeks with a unit of the Bundeswehr. Past examples include Gebirgsjäger, Panzer, Fallschirimjäger, and Panzergrenadiere units, in locations throughout Germany.

• **German Forum**: Explore German language and culture through films, cuisine, and trip sections. The Forum participates yearly in the Steuben Parade and Quadrille Ball in New York City, and many smaller club events throughout the year. Additionally, the club also offers Stammtisch, where Cadets can practice German in a casual atmosphere with civilians, exchange students, and Officers.

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What Are My Study Program Options?

You can be a **German Language Major**, a **Dual Language Major**, or combine the language and the region with an interdisciplinary **Foreign Area Studies: Europe** major.

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**Sample German-language 8TAP**

**German Course Offerings**

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**Sample Dual-Language 8TAP** (German & French)

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**Sample 8TAP: Foreign Area Studies, Europe**

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*Basic language (203/204) and Regional History (H108) courses related to a cadet’s assigned language/region do not count toward the major.*
Where will your language take you?

Persian is the official language of Afghanistan

Is this for you? Learn more by checking us out at the DFL page or look us up on Facebook: West Point Department of Foreign Languages

خوش آمدید!

Drop by the Persian office in DFL (WH5100C) or contact your instructor directly.

@westpoint_stephanie.irani-tehrani@westpoint.edu.edu

Middle East Area Studies
Eurasian Area Studies
Dual Language

IRAN
Why Study Area Studies Persian?
چرا فارسی بخوانیم؟

The sphere of influence of the Persian language and culture, or the Persianate World, stretches from China in the East through Central Asia to Georgia and Azerbaijan in the north, the Persian Gulf in the South and Kurdistan in the West. As an Area Studies Middle East (Persian) major you will develop your linguistic skills by gaining mastery of the language and culture at the crossroads of history and civilization. You will also get a strong complement of multi-disciplinary courses from other departments in order to contextualize and deepen your understanding of the region and the language.

OPEN YOUR WORLD: GO ABROAD

AIAD: Persian boasts the longest Summer AIAD program of any language with an 8-week immersion in Dushanbe, Tajikistan. Cadets live with host families and receive formal instruction in Iranian Persian (Farsi) and Tajik Persian (Tajiki). Cadets visit major historic sites of Tajikistan, and take regular excursions into the majestic Tajik countryside. SAP: Apart from intense cultural and linguistic immersion, cadets take part in distance learning and online courses while in Dushabeh for a whole semester.

Spring Immersion: During Spring Break cadets have participated in immersion experiences I places such as Los Angeles and Central Asia. Persian Forum: Cadets are encouraged to take advantage of events organized by the Persian Forum. The club holds movie nights, and travels to NYC to visit museums and exhibitions, experience Persian, Tajik, and Afghan cuisine, and also march in the annual Persian Parade. The Forum visits NYC’s Zoroastrian Fire Temple as well as a Jewish Temple in the Great Neck area of New York. In addition, the Forum regularly holds “Farsi Friday” tea and conversation events at the office of the Persian section to encourage development of conversational skills.

Academic Award Available: Honor Society of Phi Kappa Phi and DFL Award for Excellence in Persian Studies.

What will my program be?
برنامه من چه خواهد بود؟

Here is a sample 8TAPs for the Area Studies Middle East: Persian major consisting of ten courses. Or, take a dual-language major with Persian and another language, six in the primary and four in the secondary language.

For an Honors major with thesis, add LN488.

Courses Offered in Persian

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Example: Area Studies Middle East: Persian

Example: Dual Persian/Arabic Major

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</table>

Example: Area Studies Middle East: Persian

Example: Dual Persian/Arabic Major
Where will your language take you?

Be a Portuguese Language Major!

BEM-VINDO!

Azores, Portugal

Amazon River, Manaus

Brazilian Jungle School, Manaus, Amazonas

Buçaco Forest, Portugal
Dive into the Lusophone World and develop your Portuguese! You may be eligible for academic travel to Brazil, Portugal, Mozambique, Cape Verde, and other destinations.

**SEMESTER ABROAD PROGRAM (SAP):**

Brazil: (IME) in Rio de Janeiro  
Portugal: University of Coimbra OR Portuguese Military Academy in Lisbon  
AIAD in Brazil, Portugal, or other countries in military and non-military settings  
MIAD at the Agulhas Negras Mountain Range to take part in the Brazilian Mountain School

**FAEP:** Live the live of a Portuguese-speaking cadet in Resende (Brazil), Lisbon (Portugal) or Nampula (Mozambique).

**ACTIVITIES AND ACADEMIC AWARDS AVAILABLE:**

Portuguese forum: Experience Portuguese-speaking cultures through food, film, music, dance, and martial arts.

- BG Charles J. Barrett Memorial Award for most outstanding cadet in language studies
- Excellence in Portuguese sponsored by the Daughters of the Founders and Patriots of America
- BG Anthony J. Smith Award for excellence in foreign studies.

---

**MAJORS WITH PORTUGUESE LANGUAGE**

Choose from a **Portuguese Language Major**, a **Dual Language Major**, or an interdisciplinary **Latin America, Europe or Africa Studies Major**. Each of these options can be taken as an honors program.

**Third Class courses for Portuguese Majors**

<table>
<thead>
<tr>
<th>Course</th>
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<tr>
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**Sample Foreign Area Studies 8TAP (Latin America)**

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*Basic language (203/204) and Regional History (HI108) courses related to a cadet’s assigned language/region do not count toward the major.

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**Sample Dual-Language 8TAP (Portuguese & Spanish)**

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<tr>
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**Sample Portuguese-Language 8TAP**

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Where will your language take you?

Be a Russian Language Major!

RUSSIAN LANGUAGE ~ RUSSIAN WITH HONORS
EURASIAN AREA STUDIES ~ DUAL LANGUAGE
What Can I Expect as a Russian Major?

As a Russian language major, you will follow a track of courses designed to develop your Russian language proficiency and cultural understanding. These courses will focus on language, culture, and Russian life. You may also have the opportunity for academic travel to Russian-speaking places such as Kazakhstan, Belarus, Georgia, Moldova, Armenia, or Latvia.

FOREIGN ACADEMY EXCHANGE PROGRAM (FAEP): Travel to places like the Kazakhstan National Military Institute in Almaty and live the life of a Kazakhstani cadet.

MIAD: Travel to the Caucasus Mountains in Georgia to take part in the NATO-accredited Georgian Mountain Training School.

AIAD: Travel to Daugavpils, Latvia or Batumi, Georgia to study Russian in an intensive summer language immersion program, and travel to see historic sites.

SEMESTER ABROAD PROGRAM (SAP): Spend a semester studying Russian and truly experiencing the culture in an immersion environment in Daugavpils, Latvia, Batumi, Georgia, Kishinev, Moldova, Kiev, Ukraine, or Almaty, Kazakhstan. Some SAP attendees also complete the “frozen conflicts” study program in republics of the former Soviet Union.

RUSSIAN CLUB: Participate in weekly club activities, learn and experience Russian culture through food, media, and guest lectures; socialize with other Russian majors and Russian-speaking cadets.

ACADEMIC AWARDS AVAILABLE: The BG Charles J. Barrett Memorial Award for most outstanding cadet in language studies, The Col. Phillip Matthews Award for excellence in Russian, The West Point Friendship Award for excellence in Russian, The BG Anthony J. Smith Award for excellence in foreign studies.

What Are My Study Program Options?

You can choose from a Russian Language Major or combine Russian with another language in a Dual Language Major, or combine study of the language and region with an interdisciplinary Eurasian Studies Major. Each of these options can be taken as an honors program. A Regional Studies Minor is also available.

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| SS375 GOVERNMENT & POLITICS OF RUSSIA AND ITS NEIGHBORS | *Basic language (203/204) and Regional History (110/108) courses related to a cadet’s assigned language/region do not count toward the major.
¡BIENVENIDOS!
Be a Spanish Language Major!

SPANISH LANGUAGE ~ SPANISH WITH HONORS
LATIN AMERICAN STUDIES ~ DOUBLE LANGUAGE
What Can I Expect as a Spanish Major?

As a Spanish language major you will follow a track of courses designed to develop your Spanish language proficiency and cultural understanding. These courses will focus on language and cross-cultural competency. You may also have the opportunity for academic travel to Spanish-speaking areas such as Spain, Chile, Mexico, or Colombia.

FOREIGN ACADEMY EXCHANGE PROGRAM (FAEP): Travel to places like the Spanish, Colombian, Peruvian, or Mexican Military Academies and live the life of a Spanish-speaking Military cadet.

MIAD: Travel to Lonquimay in Chile to take part in the Chilean Mountain Warfare School.

AIAD: Travel to Spain, Chile, Colombia, Mexico, Argentina, or another Spanish-speaking country to study Spanish in an intensive summer language immersion program, and travel to see historic sites.

SPRING IMMERSION: Spend your spring break experiencing Spanish or Latin American culture first hand in countries like Costa Rica, Puerto Rico, Spain, or other exciting locations.

SEMESTER ABROAD PROGRAM (SAP): Spend a semester studying Spanish and culture in an immersion environment in Spain or Chile.

SPANISH FORUM: Participate in monthly club activities, learn and experience Spanish culture through food, media and instruction, and socialize with other Spanish-language cadets.

ACADEMIC AWARDS AVAILABLE: Honor Society of Phi Kappa Phi, Spanish Honors Program, Graduation Honor Roll

What Are My Study Program Options?

You can choose from a Spanish Language Major, combine Spanish and another language for a Dual Language Major, or combine the language and the region with an interdisciplinary Latin American Studies Major. Each of these options can be taken as an honors program. Language majors also work well as part of a Double Major with another department.

Third Class courses are identical for all Spanish Major options.

### Sample Spanish-language 8TAP

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>1st Class</th>
<th>2nd Class</th>
<th>3rd Class</th>
<th>4th Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>LS380</td>
<td>NATURE OF MODERN LANGUAGES</td>
<td>Spring</td>
<td>Fall</td>
<td>Spring</td>
<td>Fall</td>
</tr>
<tr>
<td>LS371</td>
<td>INTENSIVE INTERMEDIATE SPANISH</td>
<td>Spring</td>
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<td>Spring</td>
<td>Fall</td>
</tr>
<tr>
<td>LS372</td>
<td>SPANISH FOR ORAL AND WRITTEN COMM.</td>
<td>Spring</td>
<td>Fall</td>
<td>Spring</td>
<td>Fall</td>
</tr>
<tr>
<td>LS470</td>
<td>SPECIAL TOPIC IN SPANISH</td>
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<td>Fall</td>
<td>Spring</td>
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</tr>
<tr>
<td>LS475</td>
<td>SPANISH RDG/WRTG THROUGH MEDIA</td>
<td>Spring</td>
<td>Fall</td>
<td>Spring</td>
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<tr>
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<tr>
<td>LS483</td>
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<td>Spring</td>
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<tr>
<td>LS484</td>
<td>SPANISH AMERICAN CIV AND CULTURE</td>
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<td>Fall</td>
<td>Spring</td>
<td>Fall</td>
</tr>
<tr>
<td>LS485</td>
<td>SPANISH-AMERICAN LITERATURE</td>
<td>Spring</td>
<td>Fall</td>
<td>Spring</td>
<td>Fall</td>
</tr>
<tr>
<td>LS486</td>
<td>THE LITERATURE OF SPAIN</td>
<td>Spring</td>
<td>Fall</td>
<td>Spring</td>
<td>Fall</td>
</tr>
<tr>
<td>LN490</td>
<td>LANGUAGE AND CULTURE CAP SEMINAR</td>
<td>Spring</td>
<td>Fall</td>
<td>Spring</td>
<td>Fall</td>
</tr>
<tr>
<td>LS492</td>
<td>20th/21st CENTURY HISPANIC LITERATURE</td>
<td>Spring</td>
<td>Fall</td>
<td>Spring</td>
<td>Fall</td>
</tr>
</tbody>
</table>

*Basic language (203/204) and Regional History (HI108) courses related to a cadet’s assigned language/region do not count toward the major.

### Sample Dual-Language 8TAP (Spanish & German)

<table>
<thead>
<tr>
<th>Course Code</th>
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<td>PH205</td>
<td>SCIENCE/EV203</td>
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<td>Fall</td>
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<tr>
<td>LS371</td>
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<td>Fall</td>
<td>Spring</td>
<td>Fall</td>
</tr>
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*Basic language (203/204) and Regional History (HI108) courses related to a cadet’s assigned language/region do not count toward the major.
“Open the World”

“When I tell people in America that I am a language major, they generally say something like, ‘Why would you study languages? Everyone in Europe speaks English now anyways.’ Because of this, I questioned my decision a few times on becoming a language major. After a few days in country, these questions went away. *To truly connect with people from another culture and way of life you need to speak their native language.*”

-Cadet FAEP After Action Review
Geography & Environmental Engineering (G&EnE)
DEPARTMENT OF GEOGRAPHY & ENVIRONMENTAL ENGINEERING

MISSION

To enhance the intellectual, character, and military development of all cadets within the context of a core course in physical geography, a 3 course environmental engineering sequence, 4 majors, and a diverse offering of elective courses all while supporting the continued development of faculty and staff.

CONTACT:
GEO: MAJ Nick Lewis
EV: MAJ Caleb McCollum
GIS: CPT Krystle Harrell

3 RESEARCH CENTERS

CENTER FOR THE STUDY OF CIVIL-MILITARY OPERATIONS

CENTER FOR LANGUAGES, CULTURES, & REGIONAL STUDIES

CENTER FOR ENVIRONMENTAL AND GEOGRAPHIC STUDIES

4 MAJORS

PHYSICAL / HUMAN / ENVIRONMENTAL GEOGRAPHY

ENVIRONMENTAL ENGINEERING

GEOGRAPHIC INFORMATION SYSTEMS

ENVIRONMENTAL SCIENCE

GEOLOGY FIELD COURSE

GIS Research - Alaska

Geography AIAD - ISRAEL
Find your passion in:

**GEOGRAPHY**

*People & Planet*

**HUMAN**

- Emphasis on Global & Regional Culture

  **KEYWORDS:**
  - Culture
  - Regional Studies
  - Globalization

**HUMAN - ENVIRONMENT**

- Humans interaction with the Natural World

  **KEYWORDS:**
  - Natural Resources
  - Environment
  - Development

**PHYSICAL**

- Understand the Landscape & Atmosphere

  **KEYWORDS:**
  - Climate
  - Landforms
  - Natural Hazards
Environmental Program Overview

The West Point Environmental Program offers **two exciting and relevant majors** that will allow you to take a wide variety of stimulating courses. These courses will provide you with an active learning experience focused on current environmental issues, the science behind the issues, and practical control strategies—all integrated in the context of the real world. **Our subjects are in the news EVERY day.** Join us to create a secure and sustainable future!

Frequently Asked Questions

**Can I choose any engineering sequence?** No, all EV scientists take the EV Engineering sequence and EV Engineers do not take a sequence.

**Do you have any AIDAs?** Yes. In recent years we’ve travelled OCONUS to Uganda, Panama, Honduras, Guatemala and Israel. In addition, we sponsor internships with U.S. agencies such as the US Army Corps of Engineers, US Army Public Health Command, the US Army Environmental Command, the Federal Emergency Management Agency and many others.

**Can I apply to do a semester abroad?** Yes. Recent majors spent a semester in Brazil, China, Germany, Morocco, Latvia as well as at the Air Force Academy and Coast Guard Academy.

**Can I double major or take a minor?** Possibly. It is easier if you have validated courses. Please ask if you are interested as sequencing your coursework and managing the additional load becomes the key to solving this puzzle.

**Can I go to medical school if I major in Environmental Science?** Yes, medical schools value diversity and applying as an EV Science major makes you a little bit different from others. Five courses are required, at a minimum, for medical school admission (CH375, CH383, CH384, CH387, and CH473) and they can all be taken as part of the major. However, availability to take these courses will be determined based on GPA and overall candidate competitiveness for admission to med school.

**Are there any Army branches that especially require my skills?** Yes! The Engineer branch actively seeks environmental engineers. The Medical Service Corps has a concentration in Preventive Medicine that has slots specifically for environmental scientists and engineers. Our diverse faculty represent many of the Army’s branches, so ask us how environmental principles are currently applied in the Army!

**** Cadets interested in EV Engineering should take CH101 during plebe year. If possible, also take CH102 or EV203.
Environmental Engineering
The application of science and engineering principles to minimize the adverse effects of human activities on the environment and to protect human health by providing clean air and clean water for use by all living things!

Who should study EV Engineering?
Cadets concerned with the environment around them, see themselves as problem solvers, and are interested in the practice of engineering and the pursuit of professional engineering (PE) licensure.

Who should I talk to?!
EV Engineering:
LTC Andrew Pfluger, x2930

EV Program DAC:
MAJ Caleb McCollum, x4622

Environmental Engineering Courses
- Environmental Science
- Environmental Chemistry
- Environmental Biological Systems
- Water Resources Planning and Design
- Air Pollution Engineering
- Physical and Chemical Treatment
- Hydrogeology/Hydraulic Systems
- Biochemical Treatment
- Environmental Engineering Design
- Solid & Hazardous Waste Treatment
- Applied Engineering Math
- Thermal Fluid Systems I
- Chemistry II and Physics II
- 2 x Field Electives and 1 x Directed Elective
- 1 x General Elective

The environmental engineering major is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org. ABET accreditation enables graduates to take the first step towards becoming a professional engineer and is a pre-requisite for many engineering graduate programs. Historically, our graduates pass the Fundamentals of Engineering (FE) Exam at a rate higher than the national average.
Environmental Science
An integrative, holistic science-based study of how humans influence and are affected by the biological, chemical, and physical processes which shape the environment with the goal of minimizing environmental degradation and working towards sustainability.

Who should study EV Science?
Cadets who like science, care about the outdoors and the preservation of natural resources and want to understand the difficult environmental challenges of today.

Who should I talk to?!
EV Science: COL Mindy Kimball, x5421
EV Program DAC: MAJ Caleb McCollum, x4622

Environmental Science Courses
Aquatic Science
Physical Geology
Ecology
Chemistry II
Biology
Meteorology/Climatology
Geography of Global Cultures
Environmental Security
3-Course EV Engineering Sequence:
EV Science, EV Engineering Technologies, EV Engineering for Community Development
* 2 x EV Science Depth Electives
* 1 x EV Tools Elective
* 2 x EV Science Field Electives
* Electives can be tailored to assist Cadets interested in medical school eligibility, or for compatibility with scholarship, independent study, academic minors, and “with honors” degree options.

Taking the Classroom Outdoors!

EV388A: Physical Geology
Standing on the Shawangunk Quartz-Pebble Conglomerate
Looking over the Great Valley, stretching from Maine to Pennsylvania.

Electro-fishing!
Tell the story of our interaction with Earth in GIS

Join the Team 🙌

Visit our website
GIS Courses

- EV377 – Remote Sensing
- EV378 – Computer Cartography
- EV398 – Geographic Information Systems
- EV477 – Advanced Remote Sensing
- EV498 – Advanced Geographic Information Systems
- EV478 – Geospatial Military Operations
- EV379 – Photogrammetry
- EV380 – Principles of Surveying
- EV482 – Military Geography

Collect, Analyze, Visualize problems through a lens that considers physical relationships and spatial distribution

Point of Contacts:
CPT Jordan Laughlin, x3136
CPT(P) Krystle Harrell, x0207

Our Partners
History (Hist)
### The History Major

**Honors History Major with Thesis**
- 5 in-stem electives
- 2 out-of-stem electives
- HI301: Military History to WWI
- 1 HI400 series elective
- 1 semester foreign language (LX371)
- 1 Capstone Colloquium (HI498)
- 1 Capstone Senior Thesis (HI499)
- 1 Integrative Experience elective during Firstie Year
- 2 complementary support courses

**History Major with Thesis**
- 5 in-stem electives
- 2 out-of-stem electives
- HI301: Military History to WWI
- 1 semester foreign language (LX371)
- 1 Capstone Colloquium (HI498)
- 1 Capstone Senior Thesis (HI499)
- 1 Integrative Experience elective during Firstie Year
- 2 complementary support courses

**History Major without Thesis**
- 5 in-stem electives
- 2 out-of-stem electives
- HI301: Military History to WWI
- 1 semester foreign language (LX371)
- 1 Capstone Colloquium (HI498)
- 1 Capstone Senior Thesis (HI499)
- 2 complementary support courses

**American History Stem**
- HI340: Colonial America
- HI369: American Frontiers
- HI372: U.S. Foreign Relations since 1898
- HI390: Early National America
- HI394: Revolutionary America
- HI395: Civil War America
- HI396: Making of Modern America, 1877-1945
- HI397: Cold War America
- HI398: Society and Culture in American History

**International History Stem**
- HI337: China from Central Kingdom to Communist Rule
- HI339: The Modern Middle East
- HI341: The Age of Exploration
- HI343: Modern Germany
- HI344: Modern Diplomacy
- HI345: Modern Africa
- HI346: Modern South Asia
- HI347: Asian Warfare and Politics
- HI348: Modern Latin America
- HI354: World War I in Global Context
- HI355: Warfare in the Age of Industrialization
- HI357: The Cold War and Decolonization
- HI358: Strategy, Policy, and Generalship
- HI359: The Era of the Second World War
- HI360: World Wars I & II in Global Context
- HI361: Medieval Europe
- HI364: Modern Western Europe since 1789
- HI365: The Ancient World
- HI367: Imperial and Soviet Russia
- HI368: Modern Central and Eastern Europe, 1896-1989
- HI391: World Religions

**Military History Stem**
- HI338: Warfare in the Age of Revolutions
- HI354: World War I in Global Context
- HI355: Warfare in the Age of Industrialization
- HI357: The Cold War and Decolonization
- HI358: Strategy, Policy, and Generalship
- HI359: The Era of the Second World War
- HI370: Ancient & Medieval Warfare
- HI376: Early Modern Warfare
- HI381: Unconventional Warfare
- HI383: Middle Eastern Warfare
- HI385: War and its Theorists

**Department-Level Courses**
- HI410: Violence and Sex: History of War
- HI461: Topics in Gender History
- HI463: Race, Ethnicity, Nation
- HI464: Visiting Professor Elective
- XH341: Intel Cyber History
- XH405: The Holocaust and its Legacy
- XH415: Genocide and Mass Atrocity

**World Religions**
- HI399: Summer/Spring Break AIAD Experience

---

**Step 1:** Choose between honors, thesis, and without thesis programs.

**Step 2:** Choose a primary stem and select 5 electives from your primary stem (see courses at left).

**Step 3:** Choose two history electives from outside of your primary stem (see courses at left).

**Step 3a:** If an honors major, choose one 400-series elective in addition to all courses previously selected.

**Step 4:** Choose one more elective annotated with an asterisk from any stem as an Integrative Experience during your Firstie Year.

**Step 5:** Work with your DAC to choose two complementary support courses that support your unique research interests.

**Step 6:** Choose one of more than 30 subject fields for your senior colloquium, HI498. For honors majors and thesis majors, this will reflect your choice for HI499 as well.

**Step 7:** Sign up for one of our exciting AIADs and/or individual research opportunities. These experiences may count as one of your history electives!

For more information, contact a History Counselor in Thayer 157 or speak to any History Instructor.
Gain the Skills and Knowledge to Excel in the Army and Beyond

An undergraduate degree in history opens doors to many career fields. Understanding history as a critical component of culture is crucial to success in the Army’s current operating environment. Likewise, history majors are in demand for jobs in education, government, politics, and law. Not only is history one of the most common pre-law degrees in America, but the research and writing skills gained with this discipline also prepare you for an MBA or graduate school in a host of other liberal arts. History majors develop superior analytical skills that commanders, executives, and managers greatly value in members of their team.

The Study of History Enhances Your:

- Capacity to acquire, analyze, and process information and data
- Ability to communicate clearly and concisely
- Understanding of human behavior
- Cultural Awareness
- Sense of perspective, contextualization, and empathy
- Ability to handle real-world ambiguity

ALL SKILLS EVERY OFFICER NEEDS!

Travel, Explore, Experience

Tailor your research to meet your personal interests. The History Department offers many opportunities to participate in staff rides, AIAD’S, and individual research trips to places such as U.S. presidential libraries and foreign archives.

- COLD WAR EUROPE STAFF RIDE
- NORMANDY D-DAY STAFF RIDE
- OPERATION MARKET GARDEN STAFF RIDE
- ARCHIVAL RESEARCH TRIPS

...just to name a few!

“History will not show you all the answers… But, it'll tell you a lot of the questions to ask.”

~ Former Secretary of Defense James Mattis

Participate in trip sections and unique activities during the academic year

American History Philadelphia, PA

U.S. Holocaust Memorial Museum Trip, Washington, DC

Service through Phi Alpha Theta History Honors Society
Wisdom Through History

DIVERSITY & INCLUSION STUDIES MINOR DESCRIPTION

Diversity and Inclusion Studies is an interdisciplinary minor administered by the Department of Behavioral Sciences & Leadership that consists of humanities and social science courses. America is a multicultural polity and demands knowledgeable and pragmatic thinkers who understand the range of human experiences. The Diversity and Inclusion Studies Minor (DISM) exposes cadets to varied perspectives & methodologies for understanding and studying the humanities. By carefully drawing from existing courses in multiple departments, the DISM complements and enhances the core curriculum, academic majors, and several West Point Centers and committees. The DISM helps fulfill the Superintendent’s and Dean’s vision for diversity and inclusion at West Point. Moreover, the DISM at West Point offers cadets a framework for critically and creatively thinking about the broader impact of diversity and inclusion at the individual, organizational, societal, and/or global levels. It also provides our cadets opportunities to pursue diversity and inclusion in intra-, multi- and interdisciplinary ways.

5-COURSE MINOR

Must take 2 of 3
PL377: Social Inequality
EN352: Power and Difference
SS392: The Politics of Race, Gender, and Sexuality
Must take 1 of 4
HI391: World Religions
HI461: Sex and Civilizations
HI463: Race, Ethnicity, Nation
HI398: Society & Culture in American History

2 of 42 Free Electives from DISM-designated courses in Sociology, History, English, Philosophy, Psychology, Geography, Law, Foreign Languages, and Social Sciences.

- Courses may be double counted between the minor and any other curricular component, so long as three (3) courses remain unique to the minor.
- Cadets participating in semesters abroad, internships, Advanced Individual Academic Development programs (AIADs), and Special Topics courses may receive credit toward the DISM. Photo (below): Cadets and faculty on the Department of Law’s Civil Rights Staff Ride, a two-week journey throughout the American South to understand diversity and immerse cadets in the culture of the Civil Rights Movement.

AREAS OF FOCUS

DISM focuses on substantive analysis of diversity and inclusion based on, but not limited to the following categories:

- RACE & ETHNICITY
- DISABILITY
- SEXUALITY
- RELIGION
- GENDER
- CLASS
- AGE

Photo: Department of BS&L cadets, faculty, and members of the NDU-Malaysia teambuilding on a obstacle course at Camp Kungkoi.

DIVERSITY & INCLUSION STUDIES MINOR

Departments of Behavioral Sciences & Leadership, History, and English & Philosophy. Co-Chairs: Professor Morten Ender, Professor David Frey, and Associate Professor Tony McGowan.

Please contact us with any questions.
DAC: MAJ Makonen A. Campbell, TH157A.
Phone: (845) 938-5592
Email: makonen.campbell@westpoint.edu
Twitter: @DISM_USMA
Law (D/Law)
### International Law - Choose 3 of 20
- EV365  Geography of Global Cultures
- EV371  Geography of Russia
- EV372  Geography of Asia
- EV373  Geography of Latin America
- EV375  Geography of Africa
- EV376  Geography of Middle East
- EV386  Geography of Europe
- HI344  Modern Diplomacy
- HI372  U.S. Foreign Relations since 1988
- HI391  World Religions
- MG390  Negotiations for Leaders
- SS366  Comparative Politics
- SS381  Political & Cultural Anthropology
- SS385  Comparative Economic Politics
- SS465  Terrorism: New Challenges
- SS466  Advanced Terrorism Studies
- SS473  American Foreign Policy
- SS483  National Security Seminar
- SS486  International Security Seminar
- XH467  Winning the Peace

### American Law & Society - Choose 3 of 16
- HI390  Early National America
- HI394  Revolutionary America
- HI395  History of Civil War America
- HI396  Making of Modern America
- HI398  Society & Culture in Amer History
- PL372  Sociology of the Family
- PL377  Social Inequality
- PL393  Criminology
- PY359  Logical Reasoning
- PY363  Political Philosophy
- SS373  The American Presidency
- SS379  Legislative Politics
- SS386  Political Thoughts & Ideas
- SS464  Homeland Security
- SS472  The American State & The Soldier
- SS483  National Security Seminar

#### Considering the Law & Legal Studies Major?
Your choice of major will greatly define your West Point experience. We encourage you to take the time to discover your academic passion before making your new major selection:

- Talk to at least 3 academic departments to explore your many great options. You’ll know when you find the department where you belong;

- Talk to current majors in your Cadet Company about their experiences. We are happy to provide a list of our Law Majors by Regiment and Cadet Company; and,

- If Law interests you, identify yourself to a Department of Law Academic Counselor (DAC) at mark.wellman@westpoint.edu, thomas.oakley@westpoint.edu, or christopher.hartley@westpoint.edu.

We want to meet you!
STEM Depth - Choose 1 of 2
IT305  Military IT Systems
IT355  Advanced Military IT Systems

Required Law Courses Must take all 3
LW310  Introduction to Legal Studies
LW474  Law of War
LW495  Jurisprudence and Legal Theory

Law Elective Courses – Choose 7 of 10
LW410  Comparative Legal Systems
LW461  Civil Rights
LW462  Cyber Law
LW472  Criminal Law
LW473  Environmental Law
LW475  Advanced Constitutional Law
LW476  Advanced Law of Armed Conflict
LW481  International Law
LW482  National Security Law
LW490  Special Topics

Three electives of choice in either Social Sciences, History, Behavioral Sciences & Leadership or Geography & Environmental Engineering.

** Honors Thesis Program
LW498  Thesis I: Proposal & Research
LW499  Thesis II: Paper & Defense

** Not required for major.
Mathematical Sciences (Math)
Bachelor Of Science Degrees offered in:
- Mathematical Sciences.
- Operations Research.

Minors offered in:
- Applied Statistics.
- Network Science.

Mathematical Sciences Research Program:
- **Contribute to cadet education**-
  - AIADs.
  - Research Course (MA498 / MA491).
  - Service Academy Student Math Conference.
  - Projects Day.
- **Address issues facing the Army**-
  - Army Research Lab (ARL) relationship.
  - Coordination with Army Agencies.
  - Mathematical Sciences Centers.
- **Develop faculty professionally**-
  - Conferences.
  - Collaboration with other Academic Institutions.
  - Publications.
- **Enhance USMA reputation**-
  - Network Science.
  - Advocate for CLD-STEM.
  - NYC Engagements.

Our Vision: A national leader in undergraduate math education and faculty development.
- The Army's premier source for expertise in mathematics, operations research, data science, applied statistics, and network science;
- sustaining a culture where cadets, faculty, and staff members are inspired to achieve their full potential and cadets become critical thinkers and creative problem solvers;
- recognized and valued as a source of intellectual capital for the Academy, the Army, and our disciplines.
The study of mathematics provides **quantitative** and **analytical** reasoning skills to solve problems that are applicable to all of the sciences and engineering. As a mathematical sciences major, cadets will take classes in topics that include Calculus, Linear Algebra, Analysis, Statistics, Modeling, and other special topics. Cadets will conduct research on a topic of their choosing while being advised by a faculty team.

Cadets majoring in **Mathematical Sciences** are encouraged to take any three course engineering sequence of their choice as well as **multiple complementary support courses** to pursue **applications** tailored to their individual interests, research, and thesis topics.

### Finance Applications:
- Engineering Economy (EM381)
- Managerial Finance (MG410)
- Econometrics I (SS368)
- Microeconomics (SS382)
- Macroeconomics (SS388)

### Engineering Applications:
- Remote Sensing (EV377)
- Heat Transfer (ME480)
- Nuclear Reactor Design (NE355)
- Classical Mechanics (PH381)
- Space and Astronautics (SA473)

### Computational Mathematics Applications:
- Database Design & Implement (CS350)
- Data Structures (CS384)
- Design and Analysis of Algorithms (CS385)
- Database Systems (CS393)
- Object Oriented Concepts (CS403)

### Applied Statistics Applications:
- Research Methods and Data Analysis (KN494)
- Statistical Physics (PH481)
- Statistics for Engineers (SE375)
- Econometrics II (SS469)

### Cyber Applications:
- Cyber Security Engineering (CS482)
- Digital Forensics (CS483)
- Cyber Ethics (EP395)
- Cyber Operations (IT460)
- Disruptive Innovations (XE492)

### Network Science Applications:
- Supply Chain Management (EM482)
- Geographic Information Sys (EV398)
- Network Engineering (IT350)
- Deterministic Models (SE387)

### Summer AIAD opportunities continue to evolve, recent examples include:
- Hromadka & Associates (Rancho Santa Margarita, CA & Ashurst, UK).
- Mobile STEM Excursions (Houston, TX & Hawaii City, Hawaii).
- NSBE Summer Engineering Experience for Kids (Various Locations).
- Network Analyses for Human Robot Integration (Picatinny Arsenal, New Jersey).
- Sloan Kettering Cancer Center (New York City).
- Sports Analytics / Sabermetrics (Various Professional Sports Teams & Locations).

A degree in **Mathematical Sciences** is **flexible** in the breadth and depth of the topics studied based upon **cadet student interests**.

Cadets majoring in **Operations Research** will take a **three course systems engineering sequence** as well as **complementary support courses** and electives to pursue applications tailored to their individual interests, research, and thesis topics.

### Major Courses (10 Courses)
- Linear Algebra (MA371)
- Applied Statistics (MA376)
- Nonlinear Optimization (MA381)
- Mathematical Statistics (MA476)
- Linear Optimization (MA481)
- Decision Analysis (SE385)
- Systems Design I (SE402)
- Systems Design II (SE403)
- Operations Research Elective I
- Operations Research Elective II

### Complementary Support (3 Courses)
- IT/Cyber II (IT305)
- Simulation (EM381 or SE485)
- CSC Elective

### Engineering Sequence (3 Courses)
- Engineering Design (SE301)
- Deterministic Models (SE387)
- Probabilistic Models (SE388)

### Possible Electives
- Data Structures (CS384)
- Artificial Intelligence (CS486)
- Supply Chain Eng & Info Mgmt (EM482)
- Introduction To Discrete Math (MA372)
- Mathematical Analysis I (MA387)
- Sabermetrics (MA388)
- Fundamentals Of Network Science (MA394)
- Graph Theory And Networks (MA461)
- Combinatorics (MA462)
- Computer Aided Systems Eng (SE370)
- Complex Systems Architecture (SM440)
- Microeconomics (SS382)
- Macroeconomics (SS388)
- Econometrics II (SS469)

Summer AIAD opportunities continue to evolve, recent examples include:
- Hromadka & Associates (Rancho Santa Margarita, CA & Ashurst, UK).
- Mobile STEM Excursions (Houston, TX & Hawaii City, Hawaii).
- NSBE Summer Engineering Experience for Kids (Various Locations).
- Network Analyses for Human Robot Integration (Picatinny Arsenal, New Jersey).
- Sloan Kettering Cancer Center (New York City).
- Sports Analytics / Sabermetrics (Various Professional Sports Teams & Locations).

A degree in **Operations Research** applies advanced analytical methods to help make better decisions.
As a result of the demand for individuals with these skills, nationally, the number of individuals graduating with a Bachelor’s degree in statistics has risen 400% since 2001. Additionally, the Army has recognized the need for data scientists and statisticians. In particular, the Operations Research Systems Analysis (ORSA) Functional Area (FA) 49 branch has recently modified the branch vision to state that ORSAs, “serve the Army as organic experts in data science, data analytics, data visualization, and other big data specialties.”

Cadets majoring in **Applied Statistics & Data Science** will take a **cyber engineering sequence** as well as **complementary support courses** and electives to pursue applications tailored to their individual interests, research, and thesis topics.

**Major Courses (6 Courses)**
- Linear Algebra (MA371)
- Applied Statistics (MA376)
- Mathematical Statistics (MA476)
- Advanced Data Science (MA477)
- Generalized Linear Models (MA478)
- Mathematical Computation (MA486)

**Complementary Support (3 Courses)**
- Choose 1 of 2: Cyber Foundations (CY305) AND Cyber Foundations & Computing (CY355)
- Choose 2 of 2: Database Systems (CS393) AND Computer Aided Systems Eng (SE370)

**Possible Electives**
- Intro to Discrete Math (MA372)
- Foundations of Math (MA383)
- Intro to Numerical Analysis (MA386)
- Mathematical Analysis I (MA387)
- Sabermetrics (MA388)
- Mathematical Modeling (MA391)
- Fundamentals of Network Sci (MA394)
- Graph Theory and Networks (MA461)
- Combinatorics (MA462)
- Special Topics in Mathematics (MA488)
- Advanced Individual Study in Math (MA489)
- Computer Graphics (CS473)
- Artifical Intelligence (CS486)
- User Interface Development (IT383)
- Integrative System Design II (XE402)
- Disruptive Innovations (XE 492)

**S&P 500 Trends**

**Engineering Sequence (3 Courses)**
- Programming Fundamentals (CY300)
- Network Eng and Management (CY350)
- Cyber Security Engineering (CY450)

Summer AIAD opportunities continue to evolve, recent examples include:
- Hromadka & Associates (Rancho Santa Margarita, CA & Ashurst, UK).
- Mobile STEM Excursions (Houston, TX & Hawaii City, Hawaii).
- Network Analyses for Human Robot Integration (Picatinny Arsenal, New Jersey).
- Sloan Kettering Cancer Center (New York City).
- Sports Analytics / Sabermetrics (Various Professional Sports Teams & Locations).

A degree in **Applied Statistics & Data Science** exists not for itself, but rather to offer other fields of study a coherent set of ideas and tools to effectively communicate
Military Instruction (DMI)
Defense & Strategic Studies

Class of 2024 “Like None Before!”

A DSS Graduate...

➢ Solves complex problems.
➢ Understands national policy, military strategy and operational art.
➢ Effectively communicates the relation of tactical action to national policy for all audiences.

➢ Relevant

DSS educates future leaders to solve complex problems in an uncertain world. DSS Cadets study national policy, military strategy, operational art, and the use of force to understand, analyze and effectively communicate the relation of tactical action to national policy.

➢ Flexible

Choose from three curricular tracks and over 65 pre-approved electives. DSS requires only three mandatory courses and caters to Cadet research interests and preferences. DSS works closely with departments across USMA to provide a streamlined process for dual majors and minors.

➢ Fun

Participate in AIADs with SOCOM, FBI, ATF, DEA, Israel, and others. Join our annual staff ride to Europe over spring break and interact with your British, French and German counterparts. Engage with your peers at other elite institutions like Princeton, Yale, and NYU for crisis simulations, conferences and symposia.
### Defense & Strategic Studies

**Intellectually preparing Cadets for conflict**

#### Core Courses
- DS320 Introduction to Strategic Studies
- DS370 Strategy & Policy
- DS350 Persuasive Communication
- DS370 Strategy & Policy
- LX300 3rd Foreign Language

#### Track Courses
- DS370 Strategy & Policy
- DS350 Persuasive Communication
- LX300 3rd Foreign Language

#### Comp Support Courses
- DS370 Strategy & Policy
- DS350 Persuasive Communication
- LX300 3rd Foreign Language

#### Electives
- DS345 Military Innovation
- DS455 Comp. Defense Policy
- DS475 Strategic Decision Making
- DS485 Sea & Air Power

### Comp. Support Course 1
- HI301 History of Mil. Art
- Structured Electives
  - DS350 Persuasive Communication
  - LX300 3rd Foreign Language

### 2nd Class
- Comp. Support Course 1
- Structured Electives
  - DS350 Persuasive Communication
  - LX300 3rd Foreign Language

### 3rd Class
- Comp. Support Course 1
- Structured Electives
  - DS350 Persuasive Communication
  - LX300 3rd Foreign Language

### 4th Class
- Comp. Support Course 1
- Structured Electives
  - DS350 Persuasive Communication
  - LX300 3rd Foreign Language

### 1st Class
- DSS Core Course
- DS495 Research Methods
- Elective 1
- Elective 2

### Irregular Warfare
- DS360 SO/LIC
- DS460 Insurgency & Counterinsurgency

### Joint Warfare
- DS475 Strategic Decision Making
- DS485 Sea & Air Power

### Counterterrorism
- SS465 Terrorism: New Challenges
- SS466 Adv. Terrorism Studies

### Specialized Courses
- HI358 Strategy, Policy and Generalship
- HI385 War and Its Theorists
- PY325 Military Ethics
- EV482 Military Geography
- LW474 Law of Armed Conflict
- SS473 American Foreign Policy

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**For More Information Visit:**
https://www.westpoint.edu/military/department-of-military-instruction/defense-and-strategic-studies

**Department Academic Counselors:**
- LTC Matt Sacra, matthew.sacra@westpoint.edu
- MAJ Matt Snyder, matthew.snyder@westpoint.edu
- CPT Sean Marquis, sean.marquis@westpoint.edu
Physical Education (DPE)
Kinesiology
Kinesiology Major

Kinesiology is a broad, interdisciplinary field of study that includes specialties such as exercise physiology, biomechanics, muscular function and adaptation, nutrition, exercise psychology, and exercise testing and prescription. The Kinesiology major covers a wide spectrum of performance issues involving muscular and cardiovascular physiology, energy balance, exercise adherence, metabolic regulation, biomechanical aspects of movement, eating disorders, physical development and adaptation to training.

Required Courses
- KN355 Functional Anatomy
- KN360 Biomechanics of Human Movement
- KN365 Nutrition
- KN455 Psychology of Exercise
- KN460 Exercise Physiology
- KN467X Muscular Function and Adaptation
- KN470 Fitness Assessment and Prescription
- KN480 Theory of Advanced Performance
- CH275 Biology
- CH387 Human Physiology

Independent Research
- KN491 Independent Research I
- KN492 Independent Research II
- KN493 Independent Research III

Complementary Support Course Options
- CH383 Organic Chemistry I
- CH384 Organic Chemistry II
- CH385 Introduction to Cell Biology
- CH460 Human Anatomy
- CH473 Biochemistry
- PL250 Neurocognitive Foundations of Behavior
- PL361 Research Methods I
- PL390 Biological Psychology
- PL392 Cognitive Psychology
- PL394 Anthropometrics and Biomechanics
- PY350 Philosophy of Science
Graduates of the Kinesiology Program will be able to:

- Identify the anatomical structures that help determine physical competency and human movement
- Describe the principles of human physical development and adaptation
- Describe the musculoskeletal principles of work capacity
- Identify the principles of the mechanics of human movement
- Describe the principles of exercise psychology and their application to fitness
- Apply the principles of fitness assessment and exercise prescription
- Describe the nutritional concepts supporting the energy demands of physical training

Program Requirements

A Kinesiology major must complete twenty-four core courses and a three-course engineering sequence.

The major requires ten courses plus three complementary support courses chosen by the cadet from the Departments of Behavioral Sciences and Leadership, Chemistry and Life Sciences, or English and Philosophy.

Honors Program

In order to receive a Kinesiology with Honors degree a cadet must also:

- Complete PL361 (Research Methods I) and KN 495 (Honors Thesis)
- Attain a minimum APSC of 3.0 in the core curriculum
- Attain a minimum APSC of 3.5 in the Kinesiology curriculum

Medical School

Select Kinesiology graduates are endorsed by USMA for medical school every year.
Physics & Nuclear Engineering (PANE)
Physics: the study of matter, how it moves, and how it interacts. The goal of physics is to understand the universe from the smallest sizes inside atomic nuclei to the largest sizes of galaxies.

**Army Physics Opportunities**
Cadets who study advanced physics can serve the Army as:
- Maneuver Commanders
- Battle Staff Officers
- Astronauts
- Engineers
- Doctors
- Army Scientists
- Nuclear Weapons Experts
- Acquisition Project Managers
- Space Operations Specialists
- Intelligence Specialists

**Graduate School Opportunities**
Masters and Ph.D. graduate level Education opportunities in physics:
- Advanced Civil Schooling (ACS)
- Top Tier Universities (MIT, Stanford, Harvard)
- Naval Postgraduate School (NPS)
- Air Force Institute of Technology (AFIT)

**A Physics Major can…**
1. Apply the laws of physics to real-world situations
2. Formulate mathematical models of physical systems.
3. Solve complex equations and provide physical interpretations of mathematical results.
4. Perform research, and uphold scientific standards
5. Communicate technical and complex information clearly and logically.
6. Be prepared for graduate education.

**AIAD**
**Academic Individual Advanced Development**
You can be teamed with officers or scientists located at Army and other national research laboratories.

AIAD work has been conducted at:
- Livermore Labs, California
- Los Alamos Labs, New Mexico
- NASA-Johnson Space Flight Center, TX
- White Sands, New Mexico
- Army Research Lab, Maryland
- CERN Accelerator Lab, Switzerland
- MIT-Lincoln Lab, Massachusetts
- SMDC, Redstone Arsenal, AL

**Army Physics CFDs**
Career Field Designations (CFDs) that require advanced physics specialists:
- FA40: Space Operations
- FA52: Nuclear & Counter proliferation
- FA51: Acquisition
- FA47: Academy Professor
- FA49: Operational Research & System Analysis
**Physics Major (PHY1)**

1. Complete 12 required courses (see table below)
2. Complete a 3-course engineering sequence (3CES).
3. Take MA364 (Engineering Math) Third Class year.

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### 2nd Class Year

<table>
<thead>
<tr>
<th>Fall</th>
<th>Spring</th>
</tr>
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<tbody>
<tr>
<td>3CES-1</td>
<td>3CES-2</td>
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<tr>
<td>PL300</td>
<td>SS307</td>
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<td>PH482</td>
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<tr>
<td>PH382</td>
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### 1st Class Year

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<td>PH485</td>
<td>PH486</td>
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<tr>
<td>PH487</td>
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</tr>
</tbody>
</table>

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### Honors in Physics (PHY1H)

Honors will be awarded to cadets who meet a minimum GPA, complete PH389, and complete one additional course from the following list:

- NE361 Computational Design in NE
- NE474 Radiological Safety
- SP471 Astronautics
- SP472 Space Physics
- SP473 Astronomy
- SP474 Astrophysics
- PHx89y Individual Research (x=3,4; y=_A,B)
- PH495 Special Topics in Physics
- MA371 Linear Algebra
- MA376 Applied Statistics
- MA385 Chaos and Fractals
- MA386 Introduction to Numerical Analysis
- MA396 Numerical Methods for Solutions of Differential Equations
- MA476 Mathematical Statistics
- MA484 Partial Differential Equations
- MA485 Applied Complex Variables

---

**Honors Requirement**

- PH489 or Elective
- Elective or PH489

---

**Questions?**

<table>
<thead>
<tr>
<th>LTC D. C. Loucks</th>
<th>Dr. M. J. Pfenning</th>
</tr>
</thead>
<tbody>
<tr>
<td>845-938-7915</td>
<td>845-938-0208</td>
</tr>
<tr>
<td>Diana.Loucks</td>
<td>Michael.Pfenning</td>
</tr>
<tr>
<td>@westpoint.edu</td>
<td>@westpoint.edu</td>
</tr>
</tbody>
</table>
Do you have what it takes?

Do you want to:

• Be part of an interdisciplinary STEM program taught by excited Army professionals who want you to succeed?
• Earn a challenging, relevant degree which is the 4th highest paying major in the US according to CNBC?¹
• Be part of the sole source of Nuclear Engineering-educated undergraduates for the US Army?
• Graduate from 1 of less than 50-accredited undergraduate NE programs in the United States which is ranked 4th in the country?²
• Have the opportunity to participate in AIADs and independent research on real-world problems at top national labs / weapons facilities?
• Make the most of your 47-month West Point experience?

If you answered “yes” to any of the above, you should consider majoring in Nuclear Engineering.

² https://www.collegechoice.net/rankings/best-nuclear-engineering-degrees/

Nuclear Engineering Major (NEN1)
Class of 2024

<table>
<thead>
<tr>
<th>Term</th>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>3rd</td>
<td>NE300</td>
<td>Fund. of Nuclear Engineering</td>
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<tr>
<td>4th</td>
<td>MC300</td>
<td>Fund. of Engr. Mech. and Design</td>
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<td>NE361</td>
<td>Computational Design in NE</td>
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<tr>
<td>5th</td>
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<td>Fund. of Electrical Engineering</td>
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<tr>
<td></td>
<td>NE474</td>
<td>Radiological Safety</td>
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<td></td>
<td>MA364</td>
<td>Engineering Mathematics</td>
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<tr>
<td>6th</td>
<td>MC311</td>
<td>Thermal-Fluid Systems I</td>
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<td>MC364</td>
<td>Mechanics of Materials</td>
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<tr>
<td></td>
<td>NE355</td>
<td>Nuclear Reactor Engineering</td>
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<tr>
<td></td>
<td>PH365</td>
<td>Modern Physics</td>
</tr>
<tr>
<td>7th</td>
<td>ME480</td>
<td>Heat Transfer</td>
</tr>
<tr>
<td></td>
<td>NE461</td>
<td>Adv. Computational Design in NE</td>
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<tr>
<td></td>
<td>NE452</td>
<td>Instrumentation and Shielding</td>
</tr>
<tr>
<td></td>
<td>NE495</td>
<td>Adv. Nuclear Sys. Design Project I</td>
</tr>
<tr>
<td>8th</td>
<td>NE450</td>
<td>Nuclear Weapons Effects</td>
</tr>
<tr>
<td></td>
<td>XX - - -</td>
<td>Elective (choose 1 of 15)</td>
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<tr>
<td></td>
<td>NE400</td>
<td>Nuclear Engineering Seminar</td>
</tr>
<tr>
<td></td>
<td>NE496</td>
<td>Adv. Nuclear Sys. Design Project II</td>
</tr>
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</table>

Nuclear Engineering
Core Engineering Sequence (NE CES)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>NE300</td>
<td>Fund. of Nuclear Engineering</td>
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<tr>
<td>NE350</td>
<td>Radiological Engineering Design</td>
</tr>
<tr>
<td>NE450</td>
<td>Nuclear Weapons Effects</td>
</tr>
</tbody>
</table>

For more information, contact:

Dr. Kenneth Allen        LTC Ron Hasz
938-3548                       938-8611
Kenneth.Allen@          Ronald.Hasz@
westpoint.edu              westpoint.edu

The Nuclear Engineering Program at the United States Military Academy is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org
Did you know…

The US Department of Defense uses 1-million barrels of oil every 3 days.

The Department of the Army is currently pursuing the development of micro-modular nuclear reactors for use in ground operations.

Program Facts

2018-2019 Enrollment
- 59 B.S. Nuclear Engineering (ABET Accredited) majors
- 5 Minors in Nuclear Engineering
- 80 Nuclear Engineering Sequence cadets

Facilities & Equipment
- Subcritical Facility
- Pelletron SSDH Particle Accelerator
- Radiation Detection and Spectroscopy Lab
- Computed Radiography
- 3D Scanning and Printing
- State-of-the-Art Computational Labs
- Machine Shop with CNC Equipment

Research Focus
- Mobile Nuclear Power Plants
- Radiation Detector Development
- Nuclear Counterproliferation
- Nuclear Weapon Effects and Forensics

Sponsors & Research Grants
- Defense Threat Reduction Agency (DTRA)
- Advanced Research Projects Agency (ARPA-E)

Research Funding
- FY2018 - $360K awarded
- FY2019 - $250K projected

Academic Individual Advanced Development (AIAD) and Other Opportunities

Be teamed with officers and scientists located at Army and national research laboratories. Previous AIAD work has been conducted at:
- Lawrence Livermore Lab, CA
- Los Alamos and Sandia Labs NM
- NASA-Johnson Space Flt Center, TX
- Army Research Laboratory, MD
- Pantex (TX) and Hanford (OR) Plants
- Walter Reed Army Med. Center, MD
- ESRF, France and CERN, Switzerland
- German Bundeswehr Research Center
- IAEA, Austria and ITER, France

Qualifying NE majors have recently been selected for:
- Post-graduation scholarships (Draper and GEM)
- Semester Abroad (Singapore, Latvia, Spain, Morocco and others)
- Academy Exchange

Recent NE majors have been recognized for:
- Best paper at the National American Nuclear Society Student Conference
- Contributing authors for peer-reviewed publications
Introducing the newest program USMA has to offer…
Space Science Major
Space Science Minor

Reasons to study Space Science at USMA...

Space exploration is exciting…

"Deciphering" the Universe is a ceaseless human endeavor throughout history…

Space is fascinating…

Missile Defense is relevant…

Space is competitive, congested, and contested…

Space is dangerous…

Space is the final frontier and the ultimate high ground!

“"The now-ubiquitous and interconnected nature of space capabilities and the world’s growing dependence on them mean that irresponsible acts in space can have damaging consequences for all of us.”
- 2010 National Space Policy

Satellites, Planets, Stars, Spacecraft, Rockets, Missiles, Lasers.....
All the (right) stuff you’ve dreamed of....
Don’t just dream it....LIVE it!!!
### 8TAP for the Space Science Major

**Space Science Major (SSC0) – Proposed 8-Term Academic Plan (8TAP)**

<table>
<thead>
<tr>
<th>4th Class Year</th>
<th>3rd Class Year</th>
<th>2nd Class Year</th>
<th>1st Class Year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fall</strong></td>
<td><strong>Spring</strong></td>
<td><strong>Fall</strong></td>
<td><strong>Spring</strong></td>
</tr>
<tr>
<td>CH101 CHEMISTRY</td>
<td>PH2X5 PHYSICS 1</td>
<td>PH2X6 PHYSICS 2</td>
<td>SS202 AMERICAN POLITICS</td>
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<tr>
<td>EN101 ENGLISH</td>
<td>EN102 ENGLISH</td>
<td>SS201 ECONOMICS</td>
<td>PY201 PHILOSOPHY</td>
</tr>
<tr>
<td>HI10X HISTORY</td>
<td>HI108X REGIONAL HISTORY</td>
<td>LX203 LANGUAGE</td>
<td>LX204 LANGUAGE</td>
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<tr>
<td>MA103 INTRO TO CALCULUS</td>
<td>MA104 CALCULUS 1</td>
<td>MA205 CALCULUS 2</td>
<td>MA364 ENGINEERING MATH</td>
</tr>
<tr>
<td>PT105 INTRO TO COMPUTING &amp; INFO. TECH.</td>
<td>PL100 PSYCHOLOGY</td>
<td>MA206 PROB. &amp; STATISTICS</td>
<td>EV203 PHYSICAL GEOGRAPHY</td>
</tr>
<tr>
<td><strong>Fall</strong></td>
<td><strong>Spring</strong></td>
<td><strong>Fall</strong></td>
<td><strong>Spring</strong></td>
</tr>
<tr>
<td>PL300 MILITARY LEADERSHIP</td>
<td>SS307 INTERNATIONAL RELATIONS</td>
<td>PH456 SCIENCE AND POLICY</td>
<td>LW403 US CONST. &amp; MILITARY LAW</td>
</tr>
<tr>
<td>HI102 HIST OF MIL. ART</td>
<td>3-COURSE ENGINEERING SEQUENCE</td>
<td>PH ELECTIVE PH365 OR PH381</td>
<td>PH384 OPTICS</td>
</tr>
<tr>
<td>PH385 LASERS</td>
<td>MX400 OFFICERSHIP</td>
<td></td>
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</tr>
</tbody>
</table>

**Legend (Space and Missile Defense areas of interest)**

- Directed Energy
- Space Science
- Missile Defense
- Cyber Operations
- Policy Development

Want more information? contact Dr. Paula Fekete
paula.fekete@westpoint.edu
Office: BH470B; 845-938-6468

Return to LoM
Space Science Minor

Take 3 space-related courses (SP471, SP472, and SP473) AND choose 2 electives within almost any major:

- BS&L majors
- C&LS majors
- C&ME majors
- EECS majors
- History majors
- Law majors
- Kinesiology majors
- Physics majors
- English & Philosophy majors*
- Foreign Language majors*
- Geography / Env. Eng. majors
- Mathematical Science majors*
- Def. & Strat. Studies majors
- Nuclear Engineering majors
- Social Science majors*
- Systems Engineering majors

*Note: Some majors may need to take the CY 3CES or may need very close consultation with the SPA0N DAC.

Want more information? contact Dr. Paula Fekete
paula.fekete@westpoint.edu
Office: BH470B; 845-938-6468
Social Sciences (Sosh)
When we assumed the Soldier, we
did not lay aside the Citizen …

-George Washington

### Toolbox Courses

**SS360 Research Methods:** An introduction to the methods and techniques of research in contemporary political science.

**SS366 Comparative Politics:** Analyzes the sources of stability or instability in political regimes and examines the conditions that promote either democracy or dictatorship.

**SS376 American Political Development:** Explores patterns in the public policy process and examines historical processes to analyze American political institutions and policy outcomes.

**SS386 Political Thought:** A comparative political philosophy course examining the philosophical foundations of Western liberal democracy and political Islam, and associated policy implications.

**SS480 Public Policymaking:** The AP capstone course, integrating and synthesizing prior study and culminating in a final project focused on a current public policy issue.

### Choose Four AP Courses

- **SS370** MASS MEDIA & AMERICAN POLITICS
- **SS373** THE AMERICAN PRESIDENCY
- **SS379** THE POLITICS OF RACE, GENDER, AND SEXUALITY
- **SS464** HOMELAND SECURITY
- **SS465** TERRORISM: NEW CHALLENGES
- **SS466** ADVANCED TERRORISM STUDIES
- **SS468** CAMPAIGNS & ELECTIONS
- **SS472** THE AMERICAN STATE & THE SOLDIER
- **SS473** AMERICAN FOREIGN POLICY
- **SS481** THE POLITICS OF DEFENSE POLICY
- **SS490A** COLLOQUIUM IN AMERICAN POLITICS
- **SS493** SENIOR STUDIES IN AMERICAN POLITICS

### Choose One IA Course

- **MAJ Rex Steele**
- LH103, 938-2811
- rex.steele@westpoint.edu

### Want more information?

American Politics Majors will take 13 courses during their first, second, and third class years. While many schedules differ, here is a typical schedule.

### What if I want even more AP?

The American Politics Thesis Program offers motivated cadets a chance to pursue original research on a topic of their own choosing.

In addition to completing the course requirements listed above, each thesis student will enroll in one additional thesis preparation course in each semester of their Firstie year.

With the assistance and oversight of their selected faculty advisor, each thesis student will produce a written thesis and present their work during Projects Day.
What is American Politics?

American Politics majors understand their role in the American system of government as citizens and officers.

- **Political Institutions**: learn about the central theories in the field regarding the major formal and informal institutions in our government, how they developed, and how they currently function.

- **Public Policy**: explore the process of policy formulation—understanding the outcomes of the political process and evaluating the character and consequences of domestic and foreign policies.

- **Strategy**: explore the formulation of defense policy and how our nation determines its interests and values— and equally important—the methods the government employs to protect these interests and values.

What can I do with an AP Major?

In the Army, an AP major will provide you the strategic, political, cultural, and policy-making knowledge that Army leaders at all levels from Platoon Leader to Theater Commander need to succeed on the contemporary battlefield.

Graduates are well prepared to serve in interesting assignments including Special Forces, Strategic Intelligence, PSYOPS/Civil Affairs, Foreign Area Officer, Strategic Planner, Embassy Attaché, Congressional Liaison, White House Fellow, and more.

AP prepares you to gain acceptance to various top graduate school programs (MPP/MPA, Ph.D., Law, or MBA). It also serves as effective preparation for federal or state government jobs, running for office, working for think-tanks or lobbyist groups, and a myriad of corporate positions in the private sector.

Why Major in American Politics?

American Politics is relevant to your career as an Army officer and beyond. Create a course of study tailored to your specific interests with the help of our extraordinary faculty.

- **Relevant**: An understanding of American Government, U.S. public policy and the political decision making process is key to your success as an Army officer in the years to come. In our major, you will understand how the world works by studying history, law, economics, media, politics, civil society, foreign policy, civil-military relations, and more.

- **Engaging**: The AP curriculum is intellectually rigorous and investigates problems to which there are no certain solutions. It will test the limits of your ability to think critically as well as creatively.

- **Flexible**: There are only 5 required courses. You get to pick your other 8 courses from a large variety of electives from almost every academic department. Build the curriculum that fits your individual interests.

- **Well Resourced**: Studying American Politics provides you the opportunity to interact with a number of expert guest speakers, travel on exciting trip sections, and the chance to compete for AIADs across the U.S. and the world. Recent AIAD locations include: The White House, Congress, Pentagon, DIA, NSC, NYPD Joint Terrorism Task force, and many more!

Join DAF today! Email CDTAlexanderDolan (Alexander.Dolan@westpoint.edu) for more information.

CDT Lagattuta and SECDEF Mattis during his AIAD serving in the Office of the Secretary of Defense.

DAF Cadets on the Saturday Night Live set during a trip section to New York City.
Students majoring in International Affairs (IA) study how power operates in the international system. We examine issues of conflict and cooperation, domestic politics, the foreign relations of states, and characteristics of the international system.
What courses do I take?
The IA program has 3 “toolbox” courses followed by a choice of tracks and electives that tailor the 13 course major to your unique interests:

**Toolbox Courses for International Affairs:**

- SS360 Research Methods
  An introduction to research methods and techniques in political science. This course covers many aspects of research design and developing critical thinking skills.

- SS366 Comparative Politics
  Analyzes the sources of stability or instability in political regimes. This course also examines the conditions that promote either democracy or dictatorship.

- SS386 Political Thought and Ideas
  An introduction to the works of major political thinkers, examining the principal questions of political thought.

Tracks (cadets choose one):

- **Security Studies Track and Foreign Policy**
  - SS395: International Security
  - SS483 National Security Seminar

- **Institutions, Governance, and Development Track**
  - SS475: Comp. Political Institutions
  - SS487: International Political Economy

<table>
<thead>
<tr>
<th>1 x Track Elective</th>
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<td>Track #1</td>
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<tr>
<td>IA #1</td>
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<tr>
<th>3 x Complimentary Support Courses</th>
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<tr>
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<td>CSC #2</td>
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<tr>
<th>Senior Thesis</th>
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<td>Senior Project</td>
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<td>Senior Faculty Colloquium</td>
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What are some of the International Affairs electives?

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<tr>
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<th>Course Title</th>
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<tr>
<td>SS372</td>
<td>Politics of China</td>
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<td>SS377</td>
<td>Politics of Europe</td>
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<td>SS378</td>
<td>Great Power Politics</td>
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<td>SS383</td>
<td>Politics of the Middle East</td>
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<tr>
<td>SS381</td>
<td>Cultural/Political Anthropology</td>
</tr>
<tr>
<td>SS385</td>
<td>Comparative Economic Systems</td>
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<tr>
<td>SS457</td>
<td>Grand Strategy</td>
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<td>SS464</td>
<td>Homeland Security</td>
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<td>SS465</td>
<td>Terrorism</td>
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<tr>
<td>SS473</td>
<td>American Foreign Policy</td>
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<tr>
<td>SS475</td>
<td>Comp. Political Institutions</td>
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<tr>
<td>SS476</td>
<td>Int. Conflict and Settlement</td>
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<tr>
<td>SS481</td>
<td>The Politics of Defense Policy</td>
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<tr>
<td>SS486</td>
<td>State Building</td>
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<tr>
<td>SS487</td>
<td>International Political Economy</td>
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</tbody>
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... and more!

What non-SOSH electives can I take?

<table>
<thead>
<tr>
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<th>Course Title</th>
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<tbody>
<tr>
<td>DS460</td>
<td>Counterinsurgency Operations</td>
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<tr>
<td>DS470</td>
<td>Military Strategy</td>
</tr>
<tr>
<td>EP363</td>
<td>Political Philosophy</td>
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<td>EP365</td>
<td>Ethics of Military Profession</td>
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<td>EV372</td>
<td>Geography of Asia</td>
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<td>EV487</td>
<td>Environmental Security</td>
</tr>
<tr>
<td>HI372</td>
<td>History of US Foreign Relations</td>
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<td>HI385</td>
<td>War &amp; Its Theorists</td>
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<td>HI391</td>
<td>World Religions</td>
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<td>IT460</td>
<td>Cyber Operations</td>
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<td>LW481</td>
<td>International Law</td>
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<td>LW482</td>
<td>National Security Law</td>
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<td>MG421</td>
<td>Strategic Management</td>
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<tr>
<td>PL471</td>
<td>Leadership in Combat</td>
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</tbody>
</table>

... and more!

**Typical Schedule**

- **Yuk Fall**
  - SS357: Advanced IR
  - SS202: American Politics
  - PY201: Philosophy and Ethics
  - SCI #3
  - DFL #1

- **Yuk Spring**
  - SS366: Comparative Politics
  - MA206: Probability and Stats
  - EV203: Physical Geography
  - SS201: Economics
  - DFL #2

- **Cow Fall**
  - IA Gateway #1
  - SS360: Research Methods
  - IA CSC #1
  - PL300: Military Leadership
  - Engineer #1

- **Cow Spring**
  - IA Gateway #2
  - SS386: Political Thought
  - IA CSC #2
  - Engineer #2
  - HI302: Military Art

- **Firstie Fall**
  - IA Regional Elective
  - IA Thematic Elective
  - IA CSC #3
  - MX400: Officership
  - Engineer #3

- **Firstie Spring**
  - IA Track Elective
  - IA Capstone
  - American Politics Elective
  - LW 403: Constitutional/Military Law
  - CY 305: Cyber Foundations
**Why Study Economics?**

Economists use a multi-disciplined approach to analyze a variety of real world situations such as the global financial crisis, the role of economics in causing and preventing conflict, and how individuals and companies respond to incentives and make money.

As an economics major, you will develop the ability to analyze situations from many different viewpoints and apply a framework to assist you with making the best decisions.

**Will I Use Economics In The Army?**

Absolutely! Economics is the study of the allocation and optimal use of scarce resources. Furthermore, economics examines the role of individual and organizational incentives in determining the efficient allocation of resources in society.

As an economics major, you will understand these important concepts and how they relate to your ability to train, educate, lead, and care for your soldiers. As an Army officer, you will need to manage scarce resources such as time, ammunition, equipment and personnel to efficiently and effectively prepare your unit for combat operations. Economic expertise also provides a foundation for you to understand the importance of economic actors in triggering, perpetuating, and resolving violent conflict in the world.

As Dwight D. Eisenhower once said “No mastery of command can substitute for an intelligent comprehension of the economic goals, the political impulses, the spiritual aspirations that move tens of millions of people. But your greatest opportunity for enduring contribution to America may well be the council table, far removed from war.”

-USMA Graduation Address, June 1955

**Are you ready to declare Economics as your Major?**

If so, take a picture of the QR code, below, and seek advice from an Econ professor on course selection!

Contact:
MAJ Dallas Gilmore
Lincoln Hall 102, 938-3559
SOCEconDAC@westpoint.edu

Your SS201 instructor can also field questions!
### What Courses Do I Need To Take to Be An Economics Major?

#### What will my Schedule look like?

Economics Majors will take 13 courses (plus CY305) during their first, second and third class years. Additionally, any engineering sequence fits well with this major. While many schedules differ, here is a typical schedule.

#### Yearling Year

<table>
<thead>
<tr>
<th>Core Engineering</th>
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<tbody>
<tr>
<td>SS201/251</td>
<td>SS202</td>
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<tr>
<td>CSC: MA205</td>
<td>CSC: MA367</td>
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<tr>
<td>Science 3</td>
<td>MA206</td>
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<tr>
<td>PY201</td>
<td>EV203</td>
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<tr>
<td>LX203</td>
<td>LX204</td>
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</tbody>
</table>

#### Cow Year

- Core Engineering: Core Engineering
- Microeconomics: Macroeconomics
- Econometrics: Econ Elective
- PL300: SS307
- CY305: HI302

#### Firstie Year

- Integrative Elective: LW403
- Econ Elective: Econ Elective
- Econ Elective: Econ Elective
- Core Engineering: CSC #3
- MX400: Economics of National Security

#### Elective Courses (5 of 13)

- SS364: Game Theory
- SS380: Manpower & Labor Economics
- SS385: History of Economics
- SS387: Public Finance
- SS390: Behavioral Economics
- SS394: Financial Statements Analysis
- SS461: Economics of Leadership
- SS462: Econ of Stabilization & Growth
- SS463: Investments Theory & Applications
- SS469: Econometrics II
- SS470: Money and Banking
- SS484: International Economics
- SS487: International Political Economy
- SS490D: Research Methods
- SS494: Principles of Finance

#### Toolbox Courses (3)

- **Microeconomics (SS382):** Examine the market interaction between consumers and producers as each strives to maximize their benefit.
- **Macroeconomics (SS388):** Study the economic activity of states and nations and the role governments play in promoting prosperity.
- **Econometrics (SS368):** Quantify, test and employ economic models as they apply to real world situations.

#### Integrative Elective Course (1 of 3)

- **Public Finance (SS387):** Use economic models to solve complex governance challenges such as taxation, spending, and redistribution.
- **Manpower & Labor Econ (SS380):** Examine the nature and institutions of the labor market, to include military manpower.
- **International Economics (SS484):** Understand the economic causes and effects of international trade, policies, and money flows.

#### Global Work & Travel

The Department of Social Sciences offers a wide range of AIADs. These summer programs allow you to work for Government agencies, non-governmental organizations, US Embassies, or visit places around the world. Past trips and internships include the firms and offices at right:

- Johnson & Johnson
- Ethiopia
- IBM
- Marubeni Corp
- CME Group
- Citibank
- JPMorgan Chase
- MSD Capital
- BNY Mellon
- Deutsche Bank
- Goldman Sachs
- UBS
- Shufro Rose Wealth Mgmt.
- Axonic Capital
- March Capital Partners
- Land O’ Lakes
- Council of Economic Advisers
- Dept. of Labor
- Human Resources Command
- RAND Corp.
- Securities and Exchange Commission
- Asst Sec Army for Manpower and Reserve Affairs

#### Integrative Experience (Capstone)

**Economics of National Security (SS477):** Examine defense personnel policies, weapon-system acquisition, and defense budgeting issues along with their economic impact on government and society.

#### Complementary Support Courses (3)

- **Calculus II (MA205):** Further develop optimization skills and prepare for success in the rigorous toolbox courses.
- **Mathematics for the Social Sciences (MA367):** Develop mathematical tools essential for further study in economics.
- **CSC #3:** Choose from a variety of courses across many disciplines, providing breadth of learning based on individual interests.
The Grand Strategy Minor

The Grand Strategy Minor is a dynamic interdisciplinary program that exposes students to the theory and practice of grand strategy. The minor provides students with an academically rigorous foundation to approach problems critically, holistically, and creatively, and equips students with the intellectual tools to grapple with large-scale strategic questions and issues. The minor contains a sequence of five courses across many academic departments and includes an option for international AIAD to a strategically important region. Students in the minor also engage with leading scholars and practitioners.

Why Minor in Grand Strategy?

A Grand Strategy Minor at West Point is challenging and exciting. Studying grand strategy will enhance your ability to think and operate as a strategic leader, beyond the tactical or operational levels, in complex, uncertain environments. These are topics and modes of thought that Army officers are typically not exposed to until far later in their careers. As a Grand Strategy Minor, you will understand and analyze how and why states apply all of the instruments of national power to achieve broad foreign policy goals and promote core strategic interests.

“Grand strategy is a purposeful and coherent set of ideas about what a nation seeks to accomplish in the world, and how it should go about doing so.”
–Hal Brands

Dr. Scott Silverstone
Executive Director
scott.silverstone@westpoint.edu
Lincoln Hall B105
Course Requirements for the Grand Strategy Minor

**CURRICULUM:**

The Grand Strategy Minor contains five courses—two of which can double count for your major. All minors must take the two-course foundational sequence: Grand Strategy (SS457) and Topics in Grand Strategy (SS458).

In addition, students choose a Grand Strategy Track, where they take two electives to focus on a specific regional or disciplinary area of study. Tracks include: Domestic Sources of Grand Strategy; Political Economy; Non-Traditional Challenges; Military History and Strategy; Science, Technology, and Design; East Asia; Europe & Russia; Middle East & Africa; and Latin America.

Lastly, Grand Strategy Minors take a capstone course from the SOSH department, and have the opportunity to travel on a three-week for credit international AIAD.

**EXAMPLES OF TWO GRAND STRATEGY COURSES:**

**SS457 Grand Strategy:** This seminar examines the key theoretical approaches to the discipline and explores how different states throughout history have practiced grand strategy. From a careful examination of strategists and strategies, we will endeavor to extract a set of principles for making grand strategy that will be useful in any future leadership role in which we may be called upon to connect desired ends with available means.

**XH397 Grand Strategy Field Study:**
This summer international AIAD experience applies key grand strategy theories to contemporary strategic issues. Through travel to a region of cutting-edge strategic importance, students will dive deeper into key grand strategy issues and enhance their understanding of grand strategy. Recently, students have traveled to China, Hong Kong, Taiwan, Greece, and key NATO member states.

**ADDITIONAL COURSES:**

- Advanced International Relations Theory
- Public Policymaking Process
- Politics of Defense Policy
- National Security Seminar
- International Security Seminar
- Advanced Individual Study in the Social Sciences
- Colloquium in American Politics or International Relations

Plus the opportunity to participate in activities with other Grand Strategy Minors and attend events with guest speakers!

Grand Strategy cadets enjoy a private lunch and seminar with Hon. Michèle Flournoy, former Undersecretary of Defense for Policy.
**Example Elective Courses**

- DS460 Counterinsurgency Operations
- C4550 Cyber Security Engineering
- LW474 Law of Armed Conflict
- SS473 American Foreign Policy
- SS476 Conflict and Negotiation
- SS477 Economics of National Security
- SS483 National Security Seminar
- XH467 Winning the Peace

**Among many others**

**Frequently Asked Questions**

**Can I double count courses toward the minor?**
Yes, you are able to double count two courses toward the minor.

**Will the minor complement my major course of study?**
Yes, cadets minoring in Terrorism Studies represent all majors at the Academy, and the minor is customizable based on your major. The minor consists of five different tracks (4 regional and 1 counterterrorism). These various tracks easily complement any major at the Academy.

**What can I expect as a minor in Terrorism Studies?**
Cadets minoring in Terrorism Studies are exposed to cutting-edge research produced by CTC faculty; guest lectures by VIP speakers; opportunities to conduct research; participation in exclusive-to-the-minor AIADs; ability to join trip sections to NYC and D.C.; and participation in crisis simulation exercises.
The Life of a CTC Minor
Systems Engineering (SE)
When equipment, people, and operations come together, this system has a mission (system function) and characteristics (system properties) that cannot be seen just by looking at the components. Systems thinking is grounded in identifying, analyzing, and enhancing these system properties to better achieve the objectives of multiple stakeholders.

In short, solving complex, interdisciplinary problems methodically and holistically
Systems Engineering Major Summary

Students learn a wide variety of methods and tools used to model and analyze systems. These include:

♦ **Simulation Modeling**: represents a system in a computer environment to gain insight.
♦ **Optimization Modeling**: searches for the best possible solution given a set of specified constraints.
♦ **Stochastic Modeling**: handles the uncertainty of information in order to inform the system outcome risks.
♦ **Project Management**: a structured process to plan, organize, lead, control resources, and execute tasks to achieve specified goals.
♦ **Decision Modeling**: decision models that are a composite perspective of several stakeholders with multiple, competing objectives for complex, high stake decisions with uncertain information.
♦ **System Design**: design and engineer a solution to complex problems from concept development and detailed design to system validation and implementation.

The major culminates with an integrative **Capstone** experience working for a real-world client developing a system solution to a complex problem.

The Systems Engineering program is accredited by the Engineering Accreditation Commission of ABET, [http://www.abet.org](http://www.abet.org)

Applies engineering principles to understand real-world problems
Prepares cadets for the everyday challenges faced by Army officers
Provides the foundation for a wide spectrum of graduate degrees

**AIAD Program**

In 2019, 44 sponsors provided 63 CONUS and 6 OCONUS opportunities in DoD and private organizations. Cadets spend 3 weeks applying the Systems Decision Process and other SE fundamentals to real-world problems and return to USMA more adaptable, agile, and inspired to continue their academic work.

“I think that Systems Engineering is USMA’s secret business degree. If you look at the heavy dose of statistics, decision making, queuing, and other problem solving classes we get, these are great spring boards for the top MBA programs and five years of leading troops in the Army in any Branch.”
A Systems Engineering Major provides the foundation to obtain three highly regarded professional certifications. Within five years of graduation you can apply for the Professional Industrial Engineer License, the Project Management Professional certification, and the Associate or Certified Systems Engineering Professional certifications.

Systems engineering is an interdisciplinary field of engineering that focuses on designing and managing complex systems over their life-cycles. Systems engineers integrate several domain specific engineering disciplines into a team effort forming a structured development process that proceeds from concept to design to production and to operation. Everything around us is a system composed of elements that interact with other components and the external environment in order to achieve a specified purpose. These systems may be a Soldier system with multiple integrated technologies or a complex system of systems involving multiple services, technological platforms, organizations, processes, and complex environments. Systems engineers are in high demand within the Department of Defense and industry due to the rapid spread of advanced technologies and the emergence of a highly networked, globally-oriented information age that drastically increased the complexity of our current and future environment.

The U.S. Army Operating Concept “Win in a Complex World” states that our advantage over enemies depends highly on our advanced technologies. The Army achieves overmatch through powerful combinations of leadership, skilled Soldiers, and technology. While the development of advanced technologies is important, the integration of these technologies into Army units and training maximizes the potential of any technology. The Systems Engineering major will provide you the opportunity to strengthen your intellect and mental agility by learning how to analyze and design innovative solutions to complex issues that require system solutions.

Complex systems require the integration of hardware, software, human, and organizational components while accounting for several types of Environmental considerations. **We offer several 5 course elective tracks** that align with one or more of these component types and considerations.

“Generally, the program taught me how to think critically and how to logically solve problems. It proved to be a big help when I went to get my MBA.”

**Systems Engineering Elective Tracks**

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<thead>
<tr>
<th>Cyber Security Systems</th>
<th>Aeronautical Systems</th>
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<tbody>
<tr>
<td>Digital Communication Systems</td>
<td>General Engineering</td>
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<tr>
<td>Electrical Robotic Systems</td>
<td>Geographic Information</td>
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<tr>
<td>Electrical System</td>
<td>Web Application System</td>
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<tr>
<td>Environmental Systems</td>
<td>Artificial Intelligence</td>
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<tr>
<td>Infrastructure Systems</td>
<td>Human Factor Systems</td>
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<tr>
<td>Mechanical Robotic Systems</td>
<td>Software Systems</td>
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<td>Nuclear Systems</td>
<td>*Student Designed Track</td>
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<td>Power Energy Systems</td>
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**The Systems Engineering Program (A Sample SE 8TAP)**

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<td>Spring</td>
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<td>SE387 Deterministic Models</td>
<td>SE388 Stochastic Models</td>
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<td>Track Elective 5</td>
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</table>

Technologies are rapidly evolving to meet the demands of a complex world.

Systems Engineers must integrate these individual technologies into a cohesive soldier system that can operate in a system of systems within the Army’s Operating Concept.
Merging engineering, technology, and business into solutions for a complex world. Engineering Management examines the engineering relationships involved in production, research, and service between the management tasks of staffing, organizing, planning, and financing. EM teaches the concepts and principles of engineering to manage the fundamentals of organizational leadership, personnel management, fiscal management, and systems understanding. EM is a highly relevant program which builds on the traditional roles of systems analysis and basic and applied sciences by emphasizing management functions in a technical setting.

“Engineering Management coupled with playing Army Football provided a remarkable foundation for being an Infantry Platoon Leader in today’s Army. The various tools and skills that the Systems Department equips cadets with helps mold adaptive leaders. This could not have better prepared me for the road ahead.” - 2012 Graduate and Army Football Team Captain

“The Department also afforded me the flexibility to take a semester abroad in Mexico and partake in many AIADs and extracurricular activities during my time as a cadet. I have a deep appreciation for the DSE’s impact on my academic and professional development.” - 2014 Graduate

“EM provided me with a versatile skill set that I have relied upon in my military and civilian careers. What sets it apart, is its emphasis on ‘thinking big picture’. The ability to make decisions based on an understanding of how multiple technologies, organizations, or social groups interact is invaluable.” - 2000 Graduate and National Security Research Fellow

Why major in EM?
- Numerous AIAD opportunities
- You choose your CSC Track
- Excellent preparatory major for serving as an Army Officer (complex problem solving, critical thinking, practical applications)
- Widely applicable for careers in engineering, the business world, and in Government
- EM majors LEAD interdisciplinary teams of engineers
- Studying EM will prepare you for a graduate degree in Engineering or an MBA
- Excellent foundation for becoming a Professional Engineer and/or Project Management Professional
- Opportunity to complete an Honors Degree

What will I study in the EM Program?
- Systems thinking
- Basics of sound financial decisions and business operations
- Tools for analyzing and making engineering decisions
- Design and analysis of production operations
- Supply chain design, planning, operation, business processes, and information management systems
- How to plan, monitor, and control a project
- A 3-course engineering sequence of your own choosing
- Electives in subject areas that interest you
- How to solve realistic and relevant problems

**Required Courses**
- Engineering Economics (EM381)
- Analytical Methods for Eng. Mgmt. (EM384)
- Project Management (EM411)
- Production Operations Mgmt. (EM420)
- Supply Chain Eng. And Info. Mgmt. (EM482)
- Statistics for Engineers (SE375)
- Professional Engineering Seminar (EM400)
- Engineering Management Design I (EM402)
- Engineering Management Design II (EM403)
- Math/Science Depth Elective

**Departmental Electives**
- Fundamentals of Sys. Eng. (SE302)
- Computer Aided Sys. Eng. (SE370)
- Decision Analysis (SE385)
- Systems Simulation (EM481)
- Combat Modeling (SE485)
- System Dynamics Simulation (SM484)

**Complementary Support Course (CSC) Tracks**
(3 Course Sequence)
- Project Management in Civil Engineering
- Electrical Engineering
- Nuclear Engineering
- Infrastructure Engineering
- Engineering Fundamentals
- Environmental Engineering
- Software Fundamentals
- Chemical Engineering

**AIAD and Capstone Project Partners**
- National Security Agency
- MIT Lincoln Labs
- Northrup Grumman
- PM Unmanned Aerial Systems
- PM Soldier Warrior
- 1st Special Warfare Training Group
- General Electric
- Verizon Communications
- General Atomics Aeronautical Systems Inc.
- Raytheon Missile Systems
- Soldier For Life, DCS- G1, HQDA and many more!

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Decision Making for Leaders in a Complex and Dynamic World

SDS graduates build interdisciplinary skills rooted in engineering, management, and social sciences.

This major will prepare SDS graduates for the following types of graduate programs:
- MBA
- Engineering & Management
- Industrial and Systems Engineering
- Business / Data Analytics

AIAD Program
In 2016, 61 sponsors provided 88 CONUS and 5 OCONUS opportunities in DoD and private organizations. Cadets spend 3 weeks applying the Systems Decision Process and other SE fundamentals to real world, undefined, problems and return to USMA more adaptable, agile, and inspired to continue their academic development in the major.

Interested in pursuing an academic field that looks at the world from a global perspective and enables you to study topics such as global sustainability, and business/engineering problems? Consider majoring in SDS, where you can quantitatively and qualitatively study the world's dilemmas from varying perspectives.
Choose 1 of 9 Elective Tracks (1 track = 3 courses)
Management Science
Project Management
Defense Systems
Personnel Management
Mathematical Modeling
International Affairs
Financial Systems
Cyber Security
Logistics Management

Flexible Electives to suit your Interests

SDS Core Classes (required)

Science Depth (Choose 1)
Biology I, Physics II, Chemistry II

Mathematics Depth (Choose 1)
Engineering Statistics or Math Elective

Complementary Support Electives (Choose 3 out of 8)
Ex: MG390: Negotiation for Leaders
PL479: Leading Org. through Change
MG395 Fundamentals of Accounting

SDS graduates are able to:
- Analyze global supply and demand of goods and its sustainability
- Understand the migration of refugees due to climate change
- Apply system dynamics to complex operational environments
- Understand the dynamic complexity involved with sustainable management of organizations
- Conduct data analytics and geospatial analysis of the battlefield to help decision makers

http://www.usma.edu/se

We are the Army's Systems Engineering Department educating cadets and developing faculty to lead teams that develop and implement high value solutions to challenging problems in a dynamic, uncertain, and technologically complex world.
45 unique sponsors with 16 new sponsors providing 88 CONUS and 5 OCONUS opportunities in DoD and private organizations. Cadets spend 3 weeks applying the Systems Decision Process and other SE fundamentals to real world, undefined, problems and return to USMA more adaptable, agile, and inspired to continue their academic development in the major.
2024 Majors Info Campaign
Ten. Timeline

- 1 MAR 21
- JAN/ FEB
- Ten. 21 JAN 21
- SEP-Oct-Nov
- Cadet Individual Exploration
  - meet with DACs, instructors, clubs, explore AIADs
  - meet with CACs to finalize term 21-2
  - meet with scholarship folks and CEP as desired
- Ten. 14-15-Oct
- Dean's Kickoff Brief / Academic Majors Fall Fair
- CACs & their Cadet Academic Off/NCO Briefs w/in Company

You meet with Department Academic Counselor & Sign up

Sign up Period Begins