

# The need is real

## EV SCIENCE

*Evidence of unprecedented environmental change at global and regional levels exists:*

**Climate change:** The Earth's surface is warming.

**Air pollution:** More than 2 million people globally every year die prematurely from outdoor and indoor air pollution.

**Ozone depletion:** The hole in the ozone layer is now the largest it has ever been.

**Lack of fresh water:** The per capita availability of fresh water is declining globally.

**Loss of biodiversity:** The great majority of well studied species are declining in distribution, abundance or both.

SOURCE: UN 2007 Global Environment Outlook



## EV ENGINEERING

**Is there a need for environmental engineers?**

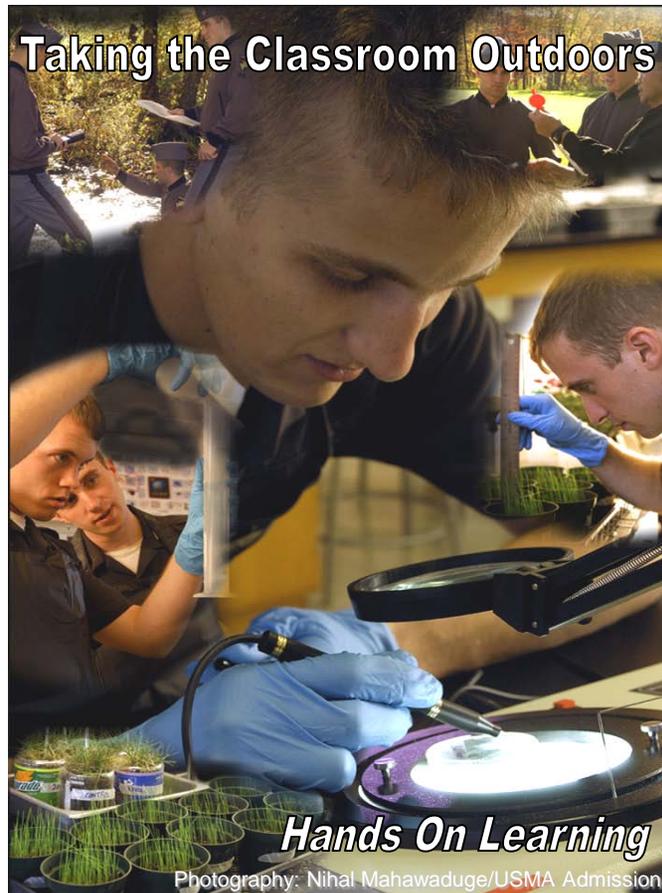
Indeed! The U.S. Bureau of Labor Statistics counts **over 54,000 environmental engineers** employed in the U.S. and Jones et al. (2005) reported the upper range may be as high as 100,000.

Moreover, Environmental Engineering is only one of two engineering disciplines that the U.S. Bureau of Labor Statistics predicts will have "much faster than average growth" over the next 10 years. The projected **25% growth in the number of environmental engineers to 68,000** by 2016 is the **largest** of any engineering discipline. In contrast, overall engineering growth will be 11%.

SOURCE: Mihelcic, J. "Environmental Engineering is a Distinct Discipline", AEESP Newsletter, 42(2), 2008.



## Taking the Classroom Outdoors



## Hands On Learning

Photography: Nihal Mahawaduge/USMA Admissions



## Department of Geography & Environmental Engineering

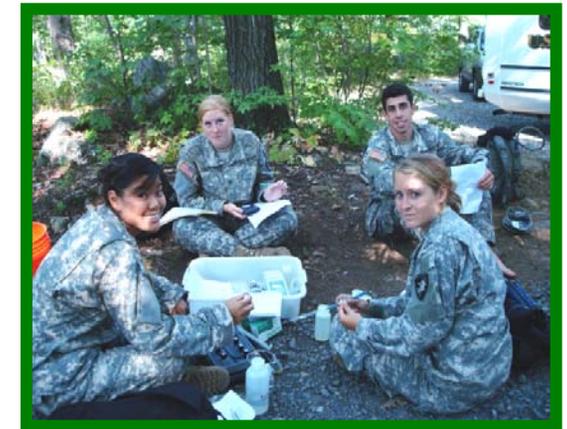
**Offering courses and majors that impart:**

- ❖ Knowledge about our environment that is critical for security and sustainability.
- ❖ Insight into other cultures that is necessary for promoting peace.
- ❖ Appraisal of terrain that is key to victory in battle.

You've chosen a profession that makes a difference in the world...



how about choosing a major that makes a difference too?



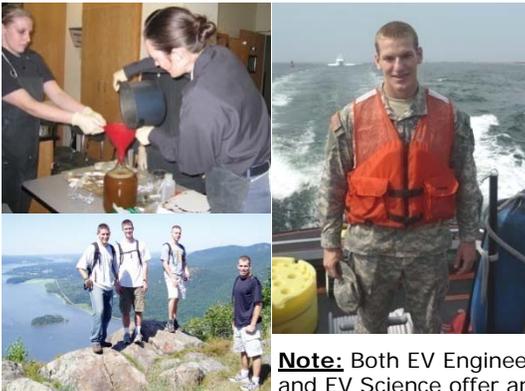
**Environmental Engineering and Environmental Science**

# WEST POINT ENVIRONMENTAL ENGINEERING

The environmental engineering major is an ABET accredited engineering program. ABET accreditation enables graduates to take the first step towards becoming a professional engineer and is a prerequisite for many engineering graduate programs. Historically, our graduates pass the Fundamental Engineering Exam at a rate higher than the national average.

## Environmental Engineering Courses

Statics & Dynamics/Electrical Engineering  
Environmental Science  
Air Pollution  
Physical Geology  
Hydrogeology  
Environmental Engineering Seminar  
Environmental Biological Systems  
Physical and Chemical Treatment  
Biochemical Treatment  
Water Resources Planning and Design  
Solid and Hazardous Waste  
Adv Environmental Engineering Design  
Vector Calculus & Partial Differential Eqns  
Thermal Fluids Systems I  
Environmental Chemistry  
Field Electives



**Note:** Both EV Engineering and EV Science offer an Honors major if you are interested.

# ENVIRONMENTAL *Two relevant majors!*

## Environmental Majors

The 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 these issues, and practical control strategies all integrated in the context of the real world. Our subject is in the news EVERY day. Join us in the battle to protect the Earth!

### **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 (including us)!

#### **Who should study EV Eng?**

Cadets who are 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.



### **Environmental Science**

An integrative, holistic science-based study of how humans affect and are affected by the biological, chemical, and physical processes which shape the environment with the goal of minimizing environmental degradation and promoting sustainability.

#### **Who should study EV Sci?**

Cadets who like science, care about the out-of-doors and preserving wild places, and want to be problem solvers for mitigating the environmental challenges facing us in the 21st century.



# PROGRAM ENVIRONMENTAL SCIENCE

The environmental science major connects the natural sciences that describe the environment (biology, ecology, geology, meteorology) with the human pursuits of business, industry and government. Environmental science serves as a strong foundation for your Army career as well as graduate studies in the natural sciences, medicine, law, or business management.

## Environmental Science Courses

Biology  
Ecology  
Physical Geology  
Meteorology or Climatology  
Geography of Global Cultures  
Environmental Security  
3 Course EV Engineering Sequence:  
EV Science, EV Technologies, EV Decision Making  
2 EV Science Depth Electives\*  
1 EV Tools Elective (e.g. GIS)\*  
1 EV Science Field Elective\*

\* Electives can be tailored to assist cadets interested in taking the MCAT and meeting the requirements for medical school eligibility.



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Internal web site:  
[www-internal.dean.usma.edu/departments/geo/default.htm](http://www-internal.dean.usma.edu/departments/geo/default.htm)