

What is Information Engineering?

Information Engineering is a branch of systems engineering that deals with the integration of information and decision making in order to increase the effectiveness of a system. Often, this integration happens in the design and analysis of command and control systems that govern complex organizations.

Why Study Information Engineering?

Globalization brings rapid increases in information availability, connectivity, processing power, and organizational complexity. Information engineers build systems to help transform these challenges into a decisive advantage on the battlefield or in the market.

Information Engineering prepares you to be an Army leader.

You will better understand how to exercise command and control over your troops. You will understand how to use information systems to make better and more timely decisions to accomplish your mission. As you progress in your career, you will be able to design and integrate command and control systems into Army tactical operations centers in order to execute more effective combat operations faster and with fewer casualties. For example, the Army's Future Combat Systems are a series of advanced manned and robotic systems integrated by a common battle command network.

The Bureau of Labor Statistics estimates a 40% growth in IT jobs over the next decade.

As an information engineer, your skills can help businesses transform information technology into a competitive advantage.

- ✓ Wachovia Bank uses business intelligence to grow customer satisfaction and loyalty.
- ✓ Trump Entertainment Resorts looks to IE to identify trends and develop new strategic business initiatives.
- ✓ Pfizer uses data mining to get relevant information out of clinical trials.

Whether your career path is Army or industry, IE skills are employable in any success driven organization.

Training and Technology

Our laboratories utilize the same technology that the Army and business world use today. DSE is the only undergraduate department in the country offering this technology. Your ability to apply this technology will be beyond that of your peers.

- ✓ Analyze the purchase of your firstie car (SE301)
- ✓ Build a map-based battle command portal to support combat operations (SE370)
- ✓ Apply data mining techniques to better understand the severity and causes of accidents (SE382)
- ✓ Simulate past and future combat operations (SE485)
- ✓ Use computerized maps and geography to select a site for a new school (EV383)
- ✓ Build visual representations of your West Point environment (SE370)

Capstone and Academic Individual Advanced Development (AIAD)

Your IE studies will culminate with a Capstone course in which you will apply your professional and technical skills to evaluate a problem for a real world client. Some Capstones overlap with AIAD opportunities and clients such as:

- ✓ US Army Night Vision Labs
- ✓ Program Executive Office (PEO) Command Control and Communications - Tactical
- ✓ PEO - Soldier
- ✓ Future Combat Systems
- ✓ Office of Force Transformation



INFORMATION ENGINEERING MAJOR



Department of
Systems Engineering
Class of 2009

United States Military Academy
West Point, New York 10996

August 2006

The Information Engineering Major* teaches information systems, engineering skills, human factors, analytical tools and business applications to exploit information technology to achieve a competitive advantage on the battlefield or in any technologically advanced organization. To major in Information Engineering, you must successfully complete the following requirements:

I. Complete the twenty seven (27) USMA core courses as specified by the Redbook.

2. Complete the thirteen (13) IE core course listed below:

1. Complete the twenty seven (27) USMA core courses as specified by the Redbook.

2. Complete the thirteen (13) IE core course listed below:

SE301	Foundations of Engineering Design & Systems Management
SE370	Computer Aided Systems Engineering
SE375	Statistics for Engineers
SE382	Decision Support Systems
SE485	Combat Modeling
EV398	Geographic Information Systems
CS301	Fundamentals of Computer Science
IT383	Human Information Interfacing
PL392	Cognitive Psychology
PL475	Human-Computer Interaction
SE402	Systems Design I
SE403	Systems Design II
IT400	Information Technology Seminar

3. Choose two (2) Engineering Skills electives:

CS350	Database Design and Implementation
CS482	Information Assurance
EM381	Engineering Economy
EM384	Analytical Methods for Engineering Management
EM411	Project Management
EM484	Dynamic Systems Analysis
IS450	Distributed Applications
IT382	Networked Systems Management
IT460	Information Warfare
SE385	Decision Analysis
SE481	Systems Simulation

4. Choose two (2) Battle Command Skills electives:

EV365	Cultural and Political Geography
EV377	Remote Sensing
EV482	Military Geography
HI381	Unconventional Warfare
HI385	War and Its Theorists
HI386	American Military Experience
HI387	Generalship – The Art of Command
PL398	Leadership Theory and Development
PL471	Leadership in Combat
PL472	Cross-Cultural Organizational Behavior
MS345	Army Operations: Past, Present, Future
MS497	Battle Command
MS498	Colloquium in Military Affairs
SS474	Terrorism: New Challenges

To Learn More About Information Engineering

Come visit us! The Information Engineering Program is in the Department of Systems Engineering located on 4th Floor of Mahan Hall. Come by the department or call 938-2700/2701 and ask for an academic counselor.

Email us: se_dac@usma.edu

Contact one of the individuals below:

LTC Rob Kewley robert.kewley@usma.edu

Learn more about Information Engineering on the Department of Systems Engineering website at:

<http://www-internal.se.usma.edu>
or www.se.usma.edu

Information Engineering

Battlefield or Boardroom ...

IE is the Future

Tactical Operations and Battle Command

Develop the skills necessary to improve battle command; perform high-level design and analysis; execute faster and more effective combat operations with fewer casualties.

Training and Techniques

Utilize state-of-the art technology and combat simulation to prepare for future combat operations. Apply data mining techniques to better understand the severity and causes of accidents.

IE is Relevant

Study Army and Industry challenges of global competition and rapid technological evolution. The IE field is growing rapidly as companies seek to gain a competitive advantage in the marketplace.

Capstone and AIAD Opportunities

Real World Problems. Real World Clients. Real World Application. Evaluate dynamic problems that involve resources such as technology, people, equipment, money and information.

Graduate School Preparation

The IE program emphasizes information systems, engineering skills, and business applications. Prepare for follow-on studies in any information systems or engineering discipline, or add a technical edge to your Masters of Business Administration (MBA).

ABET Accreditation Pending