



NDU Master's Degree Program S&T Strategy and Leadership

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Objectives

- Establish an NDU Master's Degree program in S&T Strategy and Leadership for DHS personnel in a senior career path
- Pilot program started in CY 2009-2010
- Targeted initially for DHS personnel (GS13-15) in organizations including S&T, FEMA, TSA, OIP, Secret Service and Coast Guard



Benefits of Program

- Preparation for leaders to identify long term research needs
- Smart evaluators and buyers of technical capabilities and equipment
- Prudent decision making for grants with technical content
- Increase Science and Technology literate leadership in organization
- Effective interaction with Science and Technology policy makers



National Defense University

- Congress created NDU in 1976 to provide an educational and research environment to prepare future leaders of the armed services, State Department, other U.S. government agencies, and other nations for high-level policy, command, and staff responsibilities.
- Accredited graduate-level university with 4 colleges, one school, and 15 centers of excellence with campuses in D.C. and Norfolk; over 575 Master's degrees awarded annually.
- Enrollment: ICAF: 320, NWC: 224, JFSC: 1,500, IRMC: 3,000 part time, SNSEE: 32 full-time Fellows and 300 part-time.
- Student Profile: Average age: 42, Average rank: senior LTC or Commander, with 20 years of service or civilian equivalent, 66 % of students are military officers, the remainder from other USG agencies, industry, or international students from 60 countries



NDU Masters Degree

- College of International Security Affairs
 - Master of Arts in Strategic Security Studies
 - Concentration in Homeland Security Strategy and Leadership
 - Elective program in homeland security Science and technology policy
 - Core courses are fixed
 - Concentration (3) and elective (4) courses to be selected from current list
 - Thesis research



Potential CISA Master's Curriculum with Homeland Security S&T Strategy and Leadership Concentration

	Fall	Spring/Summer
Core Strategy	<ul style="list-style-type: none">• Geostrategy• Strategic Thought	<ul style="list-style-type: none">• Power, Ideology and Legitimacy
Homeland Security Strategy and Leadership	<ul style="list-style-type: none">• Foundations of Homeland Security	<ul style="list-style-type: none">• Protection of Critical Infrastructure & Key Assets• Strategic Leadership for Homeland Security
Science & Technology	<ul style="list-style-type: none">• Technologies for Homeland Security	<ul style="list-style-type: none">• Science & Technology Planning and Strategy• Science & Technology in National Security
S&T Research	<ul style="list-style-type: none">• Methods of Argumentation and Analysis	<ul style="list-style-type: none">• Thesis Research• Thesis Writing



Core Strategy Curriculum

- Analyze 21st century geopolitical environment characterized by rise of non-state armed groups and uneven erosion of state sovereignty.
- Evaluate roles of power and ideology, rise of newly empowered and politicized ideological movements, and bases for authority and legitimacy.
- Understand relationship between political objectives, strategy, and all instruments of national power.
- Develop skills to think critically and strategically, to differentiate between policy and analysis, and to apply knowledge to practice in collaborative and complex circumstances with diverse partners.



Homeland Security Strategy & Leadership Curriculum

- Understand the foundations and doctrine of Homeland Security including threat definition and assessment, means for securing the Homeland, organization and coordination issues, and constraints on roles and missions. Areas covered include Homeland security strategies, planning and development, working vocabulary, and methodology for project assessment.
- Think critically about strategic challenges in homeland security, identify solutions, and develop strategies for effective utilization of national resources and capabilities.
- Analyze critical infrastructure protection from historical perspectives; processes, players and resources; threat, gaps and opportunities; overview the National Infrastructure Protection Plan (NIPP), including specific sector plans.
- Build organizational responses to vulnerability and hazards and towards resilience in the Target Capabilities List (TCL).
- Apply principles and practices of Project Management to Homeland Security.



Science & Technology Curriculum

- Analyze the key technologies and scientific research that will shape homeland security in the coming decades.
- Understand the key parameters of a S&T strategy including environmental and operational requirements, infrastructure, critical skills resource strategy, and implementation.
- Understand the role of S&T in the development of homeland security policy. Relevant issues include technology adaptation in complex organizations, gaps between operations and technology development, relations between technologists and policymakers, trade-offs in senior level decision making, and the limited role of technology in the need to bring to bear capabilities other than technology in order to win homeland security conflicts.
- Understand how DHS evaluates technology: research, test & evaluation, peer reviews, research and technical selection methodology, metrics, and implementation plans.
- Understand methods of analysis and argumentation for decision makers focusing on modern complex security challenges such as terrorism. Analyze logic of arguments, approach of different natural sciences, social sciences, mathematics, law, journalism and politics.



Backup Charts



Core Strategy Courses

- **SNSEE 6901-1: Strategic Thought** This course seeks to promote understanding of classic strategic thought and to prepare the student to think strategically in a fundamentally changed security environment. It examines the etiology of strategy and the foundations of modern strategy, relying on key strategic thinkers to examine the relationship between strategy and policy. Clausewitz argued that war has its own language (violence) but not its own logic (politics). Politics determines the aims for which war is fought and devises the strategy to achieve those aims. Lessons will be drawn from both historic and recent case studies, including the Peloponnesian War, the American Revolution, Vietnam, and the War in Iraq. Students will examine whether the nature of war is changing, as the New War theorists argue, or whether its basic parameters remain. Students will examine post 9-11 strategic thought, including the strategy of nonstate armed groups such as Al-Qaeda, to understand both the nature of war and of strategy in the post 9/11 security environment.
- **SNSEE 6920-1: Geostrategy** This core course surveys geopolitical principles, assesses competing security paradigms, and examines how interests are defined, particularly in terms of US hegemony. Students use a geopolitical framework to assess regional and global threats resulting from globalization, armed groups, ethnic conflict, failed states, organized crime and gangs, WMD, global ideological and opinion trends, and terrorism.
- **SNSEE 6929-1: Power, Ideology and Legitimacy** The course will examine the relationship between the concepts of power and legitimacy, focusing particularly on how ideologies are used to justify rule. Special attention will be given to radical Islamic ideologies of the type being used by al Qaeda and other similar groups. Communism, fascism and other utopian ideologies will also be discussed.



Homeland Security Fundamentals & Leadership Courses

- **SNSEE 6950: Foundations of Homeland Security:** Foundations and Issues of Homeland Security frames the topic of homeland security. Topics include: Threat, Threat Definition and Assessment; Means and Methods for Securing the Homeland; Introduction to Organization and Coordination Issues; and Law, Legal Institutions, and Legal Constraints on Roles & Missions.
- **SNSEE 6212: Protection of Critical Infrastructure and Key Assets:** This course provides a foundation for analysis of strategies, policies, critical infrastructure plans, investments and management challenges in protecting the national critical infrastructures and key assets. It examines various approaches for protecting critical infrastructures and a framework for prioritizing protection initiatives. Benefits of reducing risks, lessening vulnerabilities, deterring threats, and minimizing the consequences of terrorist attacks as well as man-made and natural disasters are explored. Other topics include an examination of the significant synergy required between the private sector and public sectors in homeland security and homeland defense, the importance of protecting the IT infrastructure as a foundation of all critical infrastructures, and implementation strategies for infusing policies and plans in government organizations.
- **SNSEE 6953: Strategic Leadership for Homeland Security** Analysis of national and international events and trends (political, economic, environmental, social, and legal) to identify threats, vulnerabilities and opportunities to minimize their impact. Function effectively in a fluid interagency environment with an appreciation of the organizational, fiscal and political constraints and opportunities. Analysis of threats and formulation of homeland security policy. Think and act dynamically in both strategy formulation and operations.



Science & Technology Courses

- **CISA 6001: Technologies for homeland Security:** This course will focus on key technologies and scientific research that will shape homeland security in the coming decades. Technologies covered will include topics such as cyber security, biotechnology and bio-inspired innovation, nanotechnology, advanced sensors, nuclear and conventional explosives detection, directed energy, and information systems. The technologies of interest to the DHS S&T six technical divisions (Explosives, Chemical/Biological, Borders and Maritime Security, Human Factors, Infrastructure/Geophysical) will be discussed. Those enrolled in the course will be asked to prepare a presentation on one area of science or technology and the implications of that technology area for homeland security.
- **6934 SCIENCE AND TECHNOLOGY IN NATIONAL SECURITY:** The in-depth examination of S&T in national security should surprise our pre-conceptions and expand our view of the world. This course focuses on key aspects ripe for such surprise. These include how S&T fits into political systems; how scientific knowledge affects policy and politics, and what kind of knowledge that may be; the influence of S&T on models for policy decision-making; how politics and organization affect R&D products and their implementation; and how S&T affects society in general, especially for foreign, domestic, and global security. The course will utilize cases from military, homeland security, and environmental settings. A persisting issue will be the role of technical expertise, and the relationship between the expert and the policy maker, and the expert and the public.
- **CISA XXXX: Science and Technology Planning and Strategy:** This course will focus on the planning process and development of strategies in science and technology. The gaps between operations and technology will be addressed. The technology adaptation within a complex organization such as DHS will be reviewed. Starting with the environmental and operational requirements, the technologies that would meet those requirements in the future will be identified. The Science and Technology infrastructure to support those requirements will then be examined. The critical S&T skills and path to achieve the needed workforce will then be addressed. The resourcing strategy and implementation plans will be discussed.



Thesis Research

- **6942 METHODS OF ANALYSIS AND ARGUMENTATION** How well leaders, executives, managers and other decision-makers analyze, evaluate and argue over their options affects the quality of decisions and policies. Effective decision-makers use not only their direct knowledge but also their skill at estimating when they need help. Therefore, SNSEE 6942 provides an introductory overview of methods of analysis and argumentation to equip decision-makers to utilize methods from different sources and under varied conditions, and to help them pursue future additional study as needed. Focusing on modern complex security challenges such as terrorism, the course examines the application of these methods: Their ideas, the tools they offer, the situations that may evoke them, and options for their further study. The course frequently discusses the logic of arguments, the approach of different natural sciences, social sciences, mathematics, law, journalism and politics. The course also examines similarities and differences between a written communication, such as a report, and a verbal communication, such as a briefing. Our goal is clarity, self-awareness, and a critical perspective on alternatives, developing arguments, presenting findings, and recommending actions. The course aims mainly at students with professional backgrounds and will utilize student experience for examples and problems. This course also enables students to start on their student research project.
- **6943 THESIS** This course enables the student to complete the Master's Thesis, a requirement for the Master of Arts in Strategic Security Studies. Students enroll in this course near the end of their program of study and select a faculty member to act as their thesis advisor. During this course, students will (1) discuss and agree upon a schedule for thesis completion with their advisor, (2) complete the Thesis Proposal with their Advisor's approval, (3) write the Thesis and submit to Advisor, (4) Make all suggested changes for Advisor Approval, and (5) Submit final copy to Advisor. Upon faculty approval of the completed thesis, students will earn 6 credits. Students have one year from enrollment in 6943 to meet the requirements.

Target Capabilities List



Common Capabilities

Planning
Communications
Community Preparedness and Participation
Risk Management
Intelligence and Information Sharing and
Dissemination

Prevent Mission Capabilities

Information Gathering and Recognition of
Indicators and Warning
Intelligence Analysis and Production
Counter-Terror Investigation and Law
Enforcement
CBRNE Detection

Protect Mission Capabilities

Critical Infrastructure Protection
Food and Agriculture Safety and Defense
Epidemiological Surveillance and Investigation
Laboratory Testing

Recover Mission Capabilities

Structural Damage Assessment
Restoration of Lifelines
Economic and Community Recovery



Respond Mission Capabilities

On-Site Incident Management
Emergency Operations Center Management
Critical Resource Logistics and Distribution
Volunteer Management and Donations
Responder Safety and Health
Emergency Public Safety and Security
Animal Disease Emergency Support
Environmental Health
Explosive Device Response Operations
Fire Incident Response Support
WMD and Hazardous Materials
Response and Decontamination
Citizen Evacuation and Shelter-in-Place
Isolation and Quarantine
Search and Rescue (Land-Based)
Emergency Public Information and Warning
Emergency Triage and Pre-Hospital Treatment
Medical Surge
Medical Supplies Management and Distribution
Mass Prophylaxis
Mass Care (Sheltering, Feeding and
Related Services)
Fatality Management