2017-2018
NAVAL POSTGRADUATE SCHOOL
INTERNATIONAL PROGRAMS CATALOG
# Table of Contents

INTERNATIONAL GRADUATE PROGRAMS OFFICE ................................................................................................................... 6
- Contact Information.................................................................................................................................................. 6
- International Graduate Programs Office Staff .......................................................................................................... 6

INTRODUCTION ....................................................................................................................................................................... 7

INTERNATIONAL DEGREE STUDENT POPULATION .................................................................................................................. 8

ADMISSION REQUIREMENTS ................................................................................................................................................... 9

HIGHLIGHTED COURSE OFFERINGS ....................................................................................................................................... 12
- Homeland Security and Defense (691) ................................................................................................................... 12
- Executive Leaders Program .................................................................................................................................... 13
- Technologies for Information Operations .............................................................................................................. 14
- Defense Planning Certificate (Graduate-Level Education for Defense Planners) (245).......................................... 15
- Cyber Security Fundamentals and Defense Certificates (257/259) ........................................................................ 15

USMC COMMAND AND STAFF COLLEGE REGIONAL SEMINAR (CONUS)....................................................................................... 17

COURSE OFFERINGS FOR EXPANDED-INTERNATIONAL MILITARY EDUCATION AND TRAINING (E-IMET) or FMS-FUNDED STUDENTS.............................................................................................................................................................................. 18
- SCHOOL OF INTERNATIONAL GRADUATE STUDIES (SIGS) (NATIONAL SECURITY AFFAIRS DEPARTMENT) ................... 18
  - Regional Studies (681-684)...................................................................................................................................... 18
  - Civil-Military Relations (685) ................................................................................................................................... 19
  - Combatting Terrorism Policy and Strategy (693) ................................................................................................... 19
  - Defense Planning Certificate (Graduate-Level Education for Defense Planners) (245).......................................... 20
  - Security Studies PhD (694) ...................................................................................................................................... 20
  - Strategic Studies (688) ............................................................................................................................................ 21
  - Combatting Terrorism Policy and Strategy (693) ................................................................................................... 19

GRADUATE SCHOOL OF BUSINESS AND PUBLIC POLICY (GSBPP).......................................................................................... 22
- Acquisition and Contract Management (815) ......................................................................................................... 22
- Defense Systems Management (International) (818) ............................................................................................. 22
- Financial Management (837) .................................................................................................................................. 23
- Information Systems Management (870) ............................................................................................................... 23
- Logistics Management Curricula (819/827) ............................................................................................................ 24
- Manpower Systems Analysis (847) .......................................................................................................................... 25
COURSES AVAILABLE UNDER FOREIGN MILITARY SALES (FMS) OR INTERNATIONAL MILITARY EDUCATION AND TRAINING (IMET) FUNDING

Applied Mathematics (380) ............................................................................................................................................... 27
Combat Systems (533) ...................................................................................................................................................... 28
Computer Science (368) .................................................................................................................................................... 29
Defense Systems Analysis (817) ....................................................................................................................................... 30
Electronic Systems Engineering (590) .............................................................................................................................. 30
Engineering Science (460) .................................................................................................................................................. 32
Identity Management Certificate (278) .......................................................................................................................... 33
Homeland Security and Defense (691) .......................................................................................................................... 33
Human Systems Integration (HSI) (362) ........................................................................................................................... 34
Information Sciences PhD (474) ......................................................................................................................................... 35
Information Strategy and Political Warfare (698) ........................................................................................................... 36
Information Warfare (International) (MS) (595) ............................................................................................................... 37
Joint Command, Control, Communications, Computers, and Intelligence (C4I) Systems (365) .................................. 37
Joint Operational Logistics (361) ....................................................................................................................................... 37
Master of Science in Engineering Science (Aerospace Engineering) (609) .................................................................... 38
Meteorology (372) ............................................................................................................................................................ 38
Meteorology and Oceanography (METOC) (373) ........................................................................................................... 39
Modeling, Virtual Environments and Simulation (MOVES) (399) .................................................................................... 40
Naval / Mechanical Engineering (570) ............................................................................................................................ 41
Network Operations and Technology (386) ..................................................................................................................... 42
Oceanography (440) .......................................................................................................................................................... 42
Operations Analysis (360) ............................................................................................................................................... 43
Regional Security Studies (East & Southeast Asia) Certificate (247) ............................................................................. 44
Regional Security Studies (Europe and Eurasia) Certificate (249) .................................................................................... 45
Regional Security Studies (Middle East, South Asia, and Africa) Certificate (246) ......................................................... 46
Regional Security Studies (Western Hemisphere) Certificate (248) ............................................................................. 46
Space Systems Operations (International) (364) .............................................................................................................. 47
Special Operations / Irregular Warfare (699) ................................................................................................................... 48
Systems Engineering (580) ............................................................................................................................................... 48
Systems Engineering PhD (581) ....................................................................................................................................... 49
Systems Engineering and Analysis (308) ........................................................................................................................ 50
TEMASEK Defense Systems Institute (TDSI) Program (MS) ................................................................. 50
Total Ship Systems Engineering (TSSE) (MS) ........................................................................................... 51
Undersea Warfare (International) (526) ................................................................................................. 51
OS3640 Framework for Countering Improvised Explosive Devices 2-0 .................................................. 52

NON-DEGREE OPTIONS ......................................................................................................................................................... 53

DISTANCE LEARNING COURSE OFFERINGS .......................................................................................................................... 54
Anti-Submarine Warfare Certificate Program (ASW) (274) ........................................................................ 54
Aviation Systems Engineering Program (312) ............................................................................................. 55
Cyber Security Defense Certificate (258) ........................................................................................................ 55
Cyber Security Fundamentals Certificate (256) .......................................................................................... 56
Electronic Warfare Engineer Certificate (292) .......................................................................................... 57
Human Systems Integration (HSI) Certificate (262) ..................................................................................... 58
Information Systems Security Engineering (ISSE) Certificate (270) ...................................................... 58
Journeyman EW Engineer Certificate (293) .............................................................................................. 59
Lead Systems Integrator (LSI) Certificate (232) ......................................................................................... 60
Master of Cost Estimating and Analysis (MCEA) (379) ........................................................................... 61
Master of Human Systems Integration (359) .............................................................................................. 62
Master of Science in Program Management (836) ...................................................................................... 62
Master of Systems Analysis (MSA) (363) .................................................................................................... 63
Senior EW Engineer Certificate (294) ......................................................................................................... 64
Space Systems Certificate (SSC) (273) ......................................................................................................... 65
Systems Analysis (SA) Certificate (281) ..................................................................................................... 66
Systems Engineering (311) .......................................................................................................................... 67
Systems Engineering Management / Product Development (MS) (721) .................................................... 67
Systems Engineering (SE) Certificate (282) .............................................................................................. 68
Master of Engineering in Electrical Engineering, MENG (EE), Electronic Warfare Focus (592) .............. 69

HOUSING OPTIONS AT NPS ..................................................................................................................................................... 71

MEDICAL INFORMATION ....................................................................................................................................................... 74

FIELD STUDIES PROGRAM ..................................................................................................................................................... 77

GENERAL INFORMATION ....................................................................................................................................................... 78

MONTEREY PENINSULA MAP ................................................................................................................................................ 80
The International Graduate Programs Office is responsible for the cultural, social and academic integration of the international military students and their families into the Naval Postgraduate School. The office is charged with interacting with the outside agencies, military and civilian to accomplish the goals of the US Joint Security Cooperation Education and Training Program (JSCETP) and the Field Studies Program (FSP). Additionally, it is responsible for the International Sponsor Program and acts as the Command Sponsor to the International Executive Committee.

Since 1954, over 6025 International officers from 116 countries have graduated from NPS. Many have gone on to achieve positions of prominence within their military services, governments, and private industry. The International Program at NPS serves as an integral link in establishing the long term military-to-military relationships between our U.S. and International officers.

The contact information for requests for Naval Postgraduate School catalogs and admission to resident study programs and all degree programs for prospective international students is:

**Contact Information**

**Mailing Address**
Naval Postgraduate School
1 University Circle, Room B-047
Monterey, CA 93943-5027

**Telephone**
831-656-2186 (DSN 756-2186)
Fax: 831-656-3064

**Web Address**
http://www.nps.edu/Services/IGPO/index.html

**International Graduate Programs Office Staff**

AL SCOTT, CAPT, USN (Ret)
Director International Graduate Programs Office
Email: adscott@nps.edu

KATHI NOYES
International Military Student Officer (IMSO)
Email: knoyes@nps.edu

KIM ANDERSEN
Field Studies Program Coordinator
Email: kandersen@nps.edu

DEBORAH GRAHAM
International Student Administrative Coordinator
Email: dgraham@nps.edu

JENNY STEVENS
Management Assistant
Email: jstevens@nps.edu

TATIANA PITSTICK
Administrative Support Assistant
Email: tfpitsti@nps.edu

This catalog is available in pdf version at: [http://my.nps.edu/web/igpo/course-offerings](http://my.nps.edu/web/igpo/course-offerings). To get to the webpage for the full NPS Course Catalog, visit: [www.nps.edu/admissions/catalog](http://www.nps.edu/admissions/catalog)

Once you are there, select Course Descriptions then go to the appropriate department: National Security Affairs (NS), Oceanography (OC), Information Systems (IS), etc.
INTRODUCTION

October 2016

In September 2016 the NPS international graduate program passed the significant milestone of having graduated over 6,025 international students from 116 countries. We start Academic Year 2017 with another diverse and unique international program. Current international enrollment includes 213 officer students from 42 countries (a complete break-down of the countries represented by our resident graduate students can be found on the student statistics page). More significantly, over 30% of these students are enrolled in Expanded International Military Education and Training (E-IMET) certified programs to include Civil Military Relations, Regional and Strategic Studies, Combating Terrorism Policy and Strategy and several resource management curricula to include Acquisition and Contracting, Systems Acquisition, Logistics Management, Financial Management, Manpower Systems Analysis, and Information Systems Management.

The Naval Postgraduate School (NPS), founded in 1909, is a fully accredited university offering over 75 unique academic curricula to military and civilian members of the Department of Defense and our allies around the world. These graduate level programs are focused on increasing the combat effectiveness of our armed forces and coalition partners, and fully support the unique and emerging requirements of the defense establishment. All programs contain a military application, and are not duplicated at civilian colleges and universities. The uniqueness of NPS is further enhanced by an outstanding civilian tenured faculty (100% with PhDs) and a motivated and talented multi-service, interagency and coalition student body. Each curriculum has a military sponsor (flag or general officer) who reviews the course content with our faculty and program officers every two years, thus enabling us to change and adjust our courses to quickly meet the current needs of the Dept. of Defense and other governmental agencies.

Of note this year, the Computer Science Department continues to offer two cyber security certificates: Cyber Security Fundamentals (MASL P170026) and Cyber Security Defense (MASL P170027) but combined as one six-month program. In addition, NPS will again offer this year a one quarter resident certificate program in Defense Planning beginning in late December. In the past, this program has included students from Armenia, Bahamas, Chile, Colombia, Estonia, Lebanon, Mongolia, Nepal, Nigeria, South Africa, Romania, Sri Lanka, Tanzania, Tunisia, Uganda and Ukraine. NPS has also reintroduced the Security Studies PhD Program under MASL P173401 (3 year option) or P173402 (4 year option). Finally, a wide range of technical programs continue to be offered including Information Systems and Technology - Curriculum 370 (P179904), Combat Systems - Curriculum 533 (P179906), Systems Engineering - Curriculum 580 (P174270) and Space Systems - Curriculum 364 (P179910). See the section on Highlighted Course Offerings for specifics on these and other programs.

I am also happy to report that we continue to offer most of our Distance Learning curricula and certificate programs to the international community. Normal academic requirements, admissions procedures, and funding requirements apply. For course titles and MASL numbers check out the Distance Learning section.

The information contained in this booklet is designed to answer basic questions regarding admission, academic programs available and other pertinent information necessary to make an orderly transition to life at the Naval Postgraduate School. Don’t hesitate to call or write if you require additional information. We look forward to supporting your needs, as our top priorities are for our students to gain the greatest possible benefit from their academic experience and enjoy their tours at NPS to the fullest!

Al Scott
CAPT, USN (Ret)
Director, International Graduate Programs Office (IGPO)
INTERNATIONAL DEGREE STUDENT POPULATION

213 Students
42 Countries
AY2017/QTR 1

North America
Canada
Mexico

Caribbean, Central and South America
Argentina
Brazil
Colombia
Peru
Trinidad and Tobago

Europe
Albania
Armenia
Bulgaria
Denmark
Finland
Georgia
Germany
Greece
Italy
Netherlands
Norway
Romania
Spain
Sweden
Switzerland
Turkey
Ukraine

Central/South Asia and Middle East
Bahrain
Israel
Jordan
Lebanon
Pakistan
Saudi Arabia

Africa
Kenya
Mali
South Africa
Tanzania
Uganda

Australia East/Southeast Asia
Australia
Indonesia
Korea
Nepal
Philippines
Singapore
Sri Lanka
Taiwan
ADMISSION REQUIREMENTS

1. Admission Eligibility. The Naval Postgraduate School is an accredited graduate degree university established for the advanced education of selected United States and Allied military officers on active duty. The only civilian students accepted must be employees of an agency within the United States Government, or of sponsoring allied governments.

2. Admission Procedures. Unlike civilian schools, we do not accept an application for admission directly from a prospective student. All international students must be formally sponsored and nominated by their respective governments. There is no formal application form. Requests for evaluation of academic records for admission into a specified curriculum should be made through appropriate channels in your Ministry of Defense. Your authorities will coordinate your application with the Security Cooperation Office of the U.S. Embassy in your country and that office will forward your records to NPS for formal evaluation for the specified curriculum. The academic records that you need to provide for forwarding to NPS should consist of a legible copy, in English, of the official transcript from each college and university that you attended. Transcripts should include the title or subject area of each course studied, the number of credit hours and the grade or score you received in each course, and the date and name of each degree and certificate that you have been awarded. Grading scale in use, as well as lowest passing marks, should also be shown. Ideally, transcripts should be received by NPS four to six months prior to the requested start date. For programs that lead to the Ph.D. current results of the Graduate Record Examination (GRE) are required. Please note that the GRE is not required for Master's Degree programs. After your records are received by NPS, four to six weeks are required for our evaluation process.

3. Academic Requirements. Academic requirements are straightforward and simple. All students accepted for admission must possess, at a minimum, a baccalaureate degree or equivalent. This course work must have been completed at a recognized university or college with a grade point average of at least C+ (2.20 on a 4.0 scale). For candidates applying for entry into the Department of National Security Affairs, a grade point average of 2.6 is required. For technical or engineering programs, successful completion of calculus and calculus-based physics must be documented as well. The Business School degree programs (MBA’s) and Special Operations curricula require successful completion of college level algebra.

4. Ph.D. Admission Requirements. NPS doctoral programs are available to officers of all U.S. services, civilian employees of the government, a limited number of DoD Contractors, and to individuals sponsored by selected allied nations. Applications may be submitted at any time. An individual applying for admission to a Ph.D. program must hold a bachelor's degree qualifying the student for graduate status in the department of his/her major study, or shall have completed an equivalent course of study. International PhD applications shall be submitted to the International Graduate Programs Office.

The application must include the following:

- Full name, title/rank, date of birth and SSN.
- Current mailing address, telephone and email.
- Department of the proposed major subject area.
- Description of current position and responsibilities.
- A brief outline (200 words or fewer) of specific areas of interest within the proposed major field of study. (For candidates pursuing a PhD in Security Studies, an expository writing sample demonstrating potential to do work of high academic quality (master’s thesis) in the proposed major field of study.)
- Identification of source of support for attendance at NPS.
- Certified copies of all undergraduate and graduate transcripts. However, transcripts from NPS are not necessary.
- Results of a Graduate Record Examination (GRE) General Test taken within the last five-years.
- Two letters of recommendation.
For international applicants not currently enrolled at NPS whose native language is other than English, or whose primary language of instruction was other than English, current results of the Test of English as a Foreign Language (TOEFL) are required. Candidates for PhD programs or accelerated programs are required to score a minimum of 100 on the iBT. Waivers will be considered on a case by case basis for scores between 90 and 100 based on the overall application package.

5. TOEFL Test. International candidates for degree and certificate programs at NPS from non-English speaking countries will be required to validate their fluency in English through the Test of English as a Foreign Language (TOEFL).

A. The minimum TOEFL score required for direct entry to NPS is 83 iBT (Internet Based Test) or 560 (written test). Additionally, the IGPO requires that a candidate achieve a minimum of 18 in each of the four testing sections of the iBT (reading, listening, speaking and writing). Candidates applying for entry into the Department of National Security Affairs (curricula 681-693) are required to score 90 or higher on the iBT. Waiver requests for scores between 83 and 90 will be considered on a case-by-case basis. Candidates for PhD programs or accelerated programs are required to score a minimum of 100 on the iBT. Waiver requests will be considered on a case-by-case basis for scores between 90 and 100 and on the overall application package.

B. When applying for a TOEFL exam, the NPS identification code is 4831. This should be included on the registration application so a copy of the results can be sent directly to NPS. TOEFL test results are valid for two years from the test date and must be valid when the student reports to NPS.

C. A candidate who fails to achieve the 83 iBT score but who does achieve a 70 iBT score is eligible to attend the 16-week TOEFL Preparatory Academic Writing Course (Advanced Language Proficiency III), MASL P177022 (16 weeks) at the Defense Language Institute in San Antonio, Texas. DLI will also accept a score of 85 on the English Comprehension Level (ECL) test if it is achieved within 30 days prior to arrival at DLI. For admission to NPS, the minimum requirement upon completion of the TOEFL Prep course is 78 (iBT) with a minimum of 16 in each of the four testing sections (reading, listening, speaking and writing). For candidates applying for entry into the Department of National Security Affairs (curricula 681-693), the minimum requirement upon completion of the TOEFL Prep course is 85 (iBT). The ALPS III course dates for 2017 and 2018 are:

<table>
<thead>
<tr>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>28 Nov 16 – 17 Mar 17</td>
<td>27 Nov 17 – 16 Mar 18</td>
</tr>
<tr>
<td>27 Feb 17 – 16 Jun 17</td>
<td>26 Feb 18 – 15 Jun 18</td>
</tr>
<tr>
<td>22 May 17 – 8 Sep 17</td>
<td>21 May 18 – 7 Sep 18</td>
</tr>
<tr>
<td>4 Sep 17 – 22 Dec 17</td>
<td>3 Sep 18 – 21 Dec 18</td>
</tr>
</tbody>
</table>

D. The only countries exempted from TOEFL testing are those countries who are exempted from all ECL testing requirements as listed in Defense Security Cooperation Agency (DSCA) Policy Memorandum 16-55 published in November 2016 (Antigua, Australia, Bahamas, Barbados, Belgium, Belize, Brunei, Canada, Denmark, Dominica, Finland, Grenada, Guyana, India, Ireland, Jamaica, Malta, Mauritius, Netherlands, New Zealand, Norway, Singapore, Sweden, St. Kitts, St. Lucia, St. Vincent, Trinidad and Tobago, and the United Kingdom). In addition, per the same memorandum, International Military Students (IMS) from Austria, Germany, Kenya, Pakistan, and Switzerland scheduled for senior PME courses, including NPS, are also exempt from all in-country and US testing of ECL, TOEFL, and OPI.

E. The TOEFL is not required for IMS having a Baccalaureate or Master’s degree from a U.S. university, a university in a TOEFL-exempt country, or a university in which the instruction was conducted in English.
F. Information regarding TOEFL testing can be obtained at the following addresses:

TOEFL Website: http://www.toefl.org/

Mailing Address:
TOEFL/TSE Services
Test of English as a Foreign Language
P.O. Box 6151
Princeton, NJ 08541-6151, USA

Telephone: 609-771-7100

Most countries have in-country testing locations where test applications/test bulletins may be obtained. Generally, testing sites are located at local colleges and universities. When applying for a TOEFL exam, remember to identify NPS on your application with Code 4831. This will ensure that your test score results will be sent directly to NPS.

The following country does not have CBT and will continue to offer the paper based exam (Bhutan). (Direct entry score of 560 required)

Test dates for the paper-based exam are scheduled periodically throughout the year. Check with TOEFL Services for actual dates and registration deadlines. Be sure and allow at least 3 months from time of application to our receiving your test results.

6. International English Learning Testing System (IELTS). The IELTS may be substituted for the TOEFL test in those cases where the TOEFL Test is not available. A score of 6.5 is required for direct entry to NPS. A score of 5.0 will be required for entry to the TOEFL Prep course.

7. The Naval Postgraduate School has an established on-campus English as a Second Language (ESL) program. We continue to utilize an ESL instructor on staff from DLI (ELC). The ESL Instructor on staff teaches both speaking and writing courses (see course descriptions below).

**IT1600 Communications Skills for International Officers (3 credit hours).** Provides the opportunity to enhance English speaking and listening skills for professional and academic environments through exercises, group discussions, and instructional briefings on a variety of subjects. The course addresses pronunciation, fluency, idiomatic usage, cultural conventions, and language functions by incorporating texts, videos, and realia to improve collaborative interaction. Building reading and writing skills is part of the course but not the main focus.

The ESL Instructor on staff will conduct a speaking and listening proficiency interview with each incoming international student to determine the individual's need to attend the course.

**IT1700 Academic Writing for International Officers (3 credit hours).** Prepares international students for the task of writing research papers and/or a thesis for an American institution of higher-education. A vigorous dedication to the writing process (pre-writing, writing, revision, and proofing) is required. The course covers the rhetorical considerations and styles of academic writing by examining appropriate organization, content, audience consideration, voice, and source citation in anticipation of degree coursework. Analysis and discussion of sample articles and essays from a variety of sources are important elements supporting skills development.

A student’s writing score from the TOEFL determines the need to attend this course. If the writing score is 21 or under, the student will be required to attend the course. Voluntary participation is also welcome.
HIGHLIGHTED COURSE OFFERINGS

HOMELAND SECURITY AND DEFENSE (691)

Curriculum 691
MASL# P173027

2017
Course Report: 19 Mar 17 18 Jun 17 10 Sep 17 26 Dec 17
Course Convene: 03 Apr 17 03 Jul 17 25 Sep 17 26 Dec 17
Course Complete: 15 Jun 18 21 Sep 18 14 Dec 18 29 Mar 19

2018
Course Report: 18 Mar 18 17 Jun 18 09 Sep 18 26 Dec 18
Course Convene: 02 Apr 18 02 Jul 18 24 Sep 18 03 Jan 19
Course Complete: 14 Jun 19 27 Sep 19 14 Dec 19 28 Mar 20

Course Length: 65 weeks

Program Description: Homeland Security and Defense provides military officers with a theoretical and practical understanding of unconventional threats within the framework of the domestic security environment, and organizational strategies to deal with such threats. It explores the military’s primary role in deterring and preventing attacks on domestic territory and in consequence management should such attacks occur. National strategic interests and objectives; the roles missions, structures, and effectiveness of Homeland Security organizations and intelligence organizations, as well as potential threats to domestic security are examined.

Curriculum 691 is a five-quarter (15-month) program. Students may enter in any quarter. Resulting degree is a Master of Arts in Security Studies (Homeland Security and Defense).

Course Pre-requisites: Candidates for the program must have achieved the following: a baccalaureate degree with an undergraduate 3.0 grade point average for all undergraduate coursework or awarded a graduate degree. International candidates must have a TOEFL score of 90 or above. International candidates must be in national security positions and must be nominated by their appropriate government agency to the military training office at the U.S. Embassy in their country as specified in the US Joint Security Cooperation Education and Training regulations.

Program POC: Kenneth Ferguson, CDR, USN
Email: klfergus@nps.edu
Phone: (831) 656-2067, DSN 756-2067
Glasgow Hall Room 336

Academic Associate: Mikhail Tsypkin, Ph.D.
Email: mtsypkin@nps.edu
Phone: (831) 656-2218, DSN 756-2218
Code 38, Glasgow Hall, Room 313
EXECUTIVE LEADERS PROGRAM

MASL# P173025

Spring 2017 (Cohort ELP 1701)
Course Report: 15 May 17
Course Convene: 16 May 17
Course Complete: 15 Feb 18

In-Residence Dates:
16 May – 19 May 17
07 Aug – 10 Aug 17
13 Nov – 16 Nov 17
12 Feb – 15 Feb 18

(see www.chds.us for subsequent course dates)

Course Length: 39 weeks
The Executive Leaders Program offers a graduate-level education for high-ranking government and private-sector leaders. The program provides an educational forum to enhance senior leaders’ capacity to identify and resolve homeland security problems as well as an opportunity to build networks among government and private-sector homeland security officials. Seminars are conducted on such topics as intelligence, critical infrastructure, border/immigration, threat recognition, crisis and risk communications, incident management and fear management as well as emerging homeland security issues.

Curriculum: This program consists of four modules beginning with foundational aspects of homeland security and threats, proceeding to describe the nature of the threats, legal and cultural aspects of preventing and preparing for the threats, the collaborations necessary to effectively manage information sharing, threat recognition, protection measures, and plans in preparation for action. All of the topics will be discussed on a strategic, policy and organizational design level with particular attention to intergovernmental planning challenges. The participants will consider complex issues and case studies, and work through problems that enable them to strengthen working relationships across regions, agencies, and local-state-federal jurisdictional and private sector lines.

Program Structure: Each module will be conducted over a four and one-half day period at the Naval Postgraduate School’s Center for Homeland Defense and Security facilities in Monterey, CA. Four one-week sessions are held on the Naval Postgraduate School campus over a nine-month period. Participants must commit to attending all four sessions. Participants consist of approximately thirty senior local, state, tribal, federal government, military and private sector officials with homeland security responsibilities. The program is designed to accommodate the busy schedules of participating executives and will not require the workload of traditional graduate level education programs. The instruction will be a combination of presentations and facilitated discussion between faculty, participants and subject matter experts. The in-residence weeks will be structured around a Monday through Friday timeframe. Each day will begin at 8:00 a.m. and end by 4:00 p.m. with the exception of Friday which ends at 10:00 a.m. The hotel accommodations will be arranged for the Sunday prior to beginning the seminar through Friday.

Selection Criteria: Candidates should be high-ranking government and private sector executives. The selection criteria look at the relevancy and level of applicants' positions and homeland security responsibilities, as well as the homeland security experience and knowledge they will bring to the program. This is significant as the sessions are facilitated roundtable discussions and debates where participants learn from one another. In addition, a major objective of the program is to establish relationships between executives across disciplines, agencies and levels of government so that they may utilize the network to develop new homeland security policies, strategies and plans to solve problems. Therefore, the selection criteria will also look at the potential benefit of relationship building to the applicant.
Tuition: Tuition provided on request; travel and lodging expenses extra.
Application Deadline: January 15, 2017 (Spring); June 15, 2017 (Fall)

Program POC: Al Scott, CAPT USN (Ret)
Director, International Graduate Program Office
Email: adscott@nps.edu
Phone: (831) 656-2186
1 University Circle, RM B-047
Naval Postgraduate School
Monterey, CA 93943

Application Question POC: Glen Woodbury
Director, Center for Homeland Defense and Security
Email: glwoodbu@nps.edu
Phone: (831) 656-3038
1 University Circle, Building 246, RM 372
Naval Postgraduate School
Monterey, CA 93943

**TECHNOLOGIES FOR INFORMATION OPERATIONS**

**MASL# P179220**

<table>
<thead>
<tr>
<th>Course</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Report</td>
<td>29 Oct 17*</td>
<td>28 Oct 18*</td>
</tr>
<tr>
<td>Course Convene</td>
<td>30 Oct 17*</td>
<td>29 Oct 18*</td>
</tr>
<tr>
<td>Course Complete</td>
<td>17 Nov 17*</td>
<td>16 Nov 18</td>
</tr>
</tbody>
</table>

*Course report, convene, and complete dates are tentative. Course is currently only offered on alternating years. Contact the International Graduate Program Office for updates (Comm 831-656-2186 / DSN 756-2186).

Course Length: 3 weeks
A course tailored for mid to high level officers (O-3 – O-5) based on recent research and development in several areas.  
A. Contemporary technology developments for military activity: Recent technology developments that show what kind of developments we face and how these could change military activity.  
B. Operational research for military activity: Methods and tools for analyzing military operations.  
C. System engineering for development of military systems: Methods and tools for developing and analyzing military (technical) systems.

The course is a technical workshop presented by various NPS faculty that covers several exciting technology areas important for tomorrow’s war fighters. The course also includes a field trip and several lab tours.

Quota: 35 worldwide on first-come first-serve basis

Course Pre-requisites:
- Undergraduate engineering degree or equivalent
- ECL score of 85.
INTERNATIONAL DEFENSE PLANNING CERTIFICATE (GRADUATE-LEVEL EDUCATION FOR DEFENSE PLANNERS) (245)

Curriculum 245
MASL# P170006

2017
Course Report: 26 Dec 17
Course Convene: 04 Jan 18
Course Complete: 30 Mar 18

2018
Course Report: 26 Dec 18
Course Convene: 03 Jan 19
Course Complete: 29 Mar 19

Course Length: 13 weeks
Defense planning is a critical capability to ensure effective and efficient performance by an armed force, as well as to ensure the civil control of armed forces. In order to support the ability of the U.S. Department of Defense and U.S. Department of State to expand the ability to educate foreign officials in defense planning, the U.S. Naval Postgraduate School has initiated an International Defense Planning Certificate from the Department of National Security Affairs. This certificate program is a resident program that will be delivered annually during NPS’s winter quarter. The program consists of four (4) graduate level courses / seminars that have been organized to appeal to mid- and higher-level civilian defense officials, as well as military officers with responsibilities for planning, organization, and management of armed forces. Sponsoring country teams and recipient countries are encouraged to engage in discussions with the Certificate’s organizers prior to sending students to Monterey to design country-specific research and analysis projects to fit with ongoing national defense reform efforts. The program will require the participating students to take four seminars: 1) Comparative Defense Planning (NS3246), 2) Comparative Defense Organization and Management (NS3245), 3) Defense Capability Development (NS3021), and 4) Strategic Planning and the Military (NS3230).

Students wishing to pursue a Master’s Degree in the Department of National Security Affairs can apply the credits gained in this Certificate Program to that degree.

Program POC: Kenneth Ferguson, CDR USN
Program Officer, National Security Affairs
Email: kfergus@nps.edu
Phone: (831) 656-2067
Glasgow Hall Room 336
Naval Postgraduate School
Monterey, CA 93943

Application Question POC: Thomas-Durell Young, Ph.D.
Director, Center for Homeland Defense and Security
Email: tdyoung@nps.edu
Phone: (831) 656-2011
Building 259, Room, 220
Naval Postgraduate School
Monterey, CA 93943

CYBER SECURITY FUNDAMENTALS and CYBER SECURITY DEFENSE CERTIFICATES (257/259)

Curricula 257/259
MASL# P170026

2017
Course Report: 19 Mar 17 18 Jun 17 10 Sep 17 26 Dec 17
Course Convene: 03 Apr 17 03 Jul 17 25 Sep 17 04 Jan 18
Course Complete: 22 Sep 17 15 Dec 17 30 Mar 18 15 Jun 18

2018
Course Report: 18 Mar 18 17 Jun 18 09 Sep 18 26 Dec 18
Course Convene: 02 Apr 18 02 Jul 18 24 Sep 18 03 Jan 19
Course Length: 26 weeks

The Cyber Security Fundamentals graduate certificate is intended to provide a technically rigorous foundation upon which to build knowledge and skills in computer network defense, attack and exploitation. Each course is comprised of both instruction and laboratory exercises involving cyber security aspects of computers and networks. These synergistic activities allow students to internalize key concepts in cyber security. The courses and material covered in the Cyber Security Fundamentals certificate satisfy prerequisite requirements for advanced cyber security courses offered by the Computer Science Department of the Naval Postgraduate School. The three courses in the certificate sequence are a subset of the graduate courses in the Department’s Computer and Network Security specialization track. Entering students are expected to have some computer programming experience. The total number of NPS graduate credits obtained for the certificate is 13.5, where laboratory credits are counted as half. This certificate program can also be applied toward a master’s degree program, e.g. to Curriculum 368.

Using the foundation established through the Cyber Security Fundamentals certificate, students enrolled in Cyber Security Defense graduate certificate will obtain a detailed understanding of and ability to function in real operational situations involving cyber security. They will gain the technical depth required to actively prepare for and respond to attacks. Students will learn to analyze network traffic to extract the observable characteristics of networks and network devices, thus providing a basis for defensive strategies. They will learn to build tools and how to configure systems and networks to permit systems to foster resiliency and continuity of operations, perhaps with reduced capacity, through attacks. Students will learn how to construct systems and tools to mitigate the impact of malicious software. Students will learn forensic techniques to retrieve and analyze stored information that may be corrupted or hidden. Considerable programming and hands-on work with systems and networks will be required. Students entering this program are expected to have a strong foundation in cyber security and networking. In addition, entering students will be expected to understand and use the languages and techniques of operating system and network component development: the C programming language, assembly, shell scripting, use of linkers, loaders, and debuggers. The total number of NPS graduate credits obtained for the certificate is 12, where laboratory credits are counted as half. This certificate program can be applied toward a master’s degree program, e.g. to Curriculum 368.

Of note, both Cyber Security Certificates (257/259) are typically earned simultaneously in two quarters.

**Required Courses for 257:**
- CS3600 Introduction to Computer Security OR CS 4600 Secure System Principles
- CS3670 Information Assurance: Secure Management of Systems
- CS3690 Network Security OR CS3695 Network Vulnerability Assessment and Risk Mitigation

**Required courses for 259:**
- CS4558 Network Traffic Analysis
- CS4677 Computer Forensics
- CS4684 Cyber Security Incident Response and Recovery OR CS4600 Secure Systems Principles

**Program POC:** Cynthia Irvine, Ph.D.
Director of Center for Information Systems Security Studies and Research (CISR)
Email: irvine@nps.edu
Phone: (831) 656-2461
Glasgow East Hall, Room 211
Naval Postgraduate School
Monterey, CA 93943
MASL# P171854

Course Report Date: July 2017

Course Length: 78 weeks
Course Description: The curriculum is derived from and parallel to the curriculum of the resident Command and Staff College (CSC). It is an accredited JPME Phase I Service Intermediate-Level program designed to educate joint, multinational, and interagency professionals in order to produce skilled warfighting leaders able to overcome diverse 21st century security challenges.

In conjunction with applying the Marine Air-Ground Task Force (MAGTF) doctrine and techniques to the changing conditions of warfare, this understanding gives officers the necessary tools to successfully function in any operational environment. Overall, the program’s focus is to develop officers who critically think, solve problems, and understand the capabilities and potential roles of MAGTFs in a joint-multinational-interagency environment.

The primary instructional methodology for the regional seminar curriculum is the seminar/guided discussion conducted by the Faculty Advisor in a conference group setting.

Seminars are conducted monthly or weekly at College of Continuing Education Satellite Campuses utilizing qualified adjunct faculty.

Prerequisites: Major and Lieutenant Colonel (O-4 – O-5). Waivers are available for senior O-3s.

Note: This program is available to international students pursuing graduate education at the Naval Postgraduate School in Monterey, CA. Students desiring to complete this program will enroll in the weekly seminar conducted by the College of Continuing Education Satellite Campus in Monterey. This enrollment will be concurrent with enrollment in their Naval Postgraduate School curricula utilizing location code PPGS and will be programmed as a separate line of training. Internationals should have 18 months remaining in their Naval Postgraduate School curricula to enroll in this program.
COURSE OFFERINGS FOR EXPANDED-INTERNATIONAL MILITARY EDUCATION AND TRAINING (E-IMET) OR FMS-FUNDED STUDENTS

SCHOOL OF INTERNATIONAL GRADUATE STUDIES (SIGS) (NATIONAL SECURITY AFFAIRS DEPT)

REGIONAL STUDIES (681-684)

Curricula 681-684 (MA)

MASL# P179031 Curriculum 681 – Middle East, Southeast Asia, and Sub-Saharan Africa
MASL# P179032 Curriculum 682 – Far East, Southeast Asia, and Pacific
MASL# P179034 Curriculum 683 – Western Hemisphere
MASL# P179033 Curriculum 684 – Europe, Russia, and Central Asia

2017
Course Report: 19 Mar 17 18 Jun 17 10 Sep 17 26 Dec 17
Course Convene: 03 Apr 17 03 Jul 17 25 Sep 17 04 Jan 18
Course Complete: 21 Sep 18 14 Dec 18 29 Mar 19 14 Jun 19

2018
Course Report: 18 Mar 18 17 Jun 18 09 Sep 18 26 Dec 18
Course Convene: 02 Apr 18 02 Jul 18 24 Sep 18 03 Jan 19
Course Complete: 27 Sep 19 13 Dec 19 27 Mar 20 19 Jun 20

Course Length: 78 weeks
Provides students with a wide knowledge and thorough understanding of the complex inter-related environments pertaining to national security affairs, as well as addresses the interface between international politics, civil-military relations, and national security objectives. Places emphasis on the proper role of the military in a democratically elected government. Curricula focus is on the history, culture, and religion of a specific region or country and provides students with knowledge of current issues, economic and political structures and institutions, military forces, including strategic capabilities and policy implications, and geopolitical influences. Students receive extensive exposure to human rights issues.
SECURITY STUDIES

CIVIL-MILITARY RELATIONS (685)

Curriculum 685 (MA)
MASL# P171403

2017
Course Report: 19 Mar 17 18 Jun 17 10 Sep 17 26 Dec 17
Course Convene: 03 Apr 17 03 Jul 17 25 Sep 17 04 Jan 18
Course Complete: 15 Jun 18 21 Sep 18 14 Dec 18 29 Mar 19

2018
Course Report: 18 Mar 18 17 Jun 18 09 Sep 18 26 Dec 18
Course Convene: 02 Apr 18 02 Jul 18 24 Sep 18 03 Jan 19
Course Complete: 14 Jun 19 27 Sep 19 14 Dec 19 28 Mar 20

Course Length: 65 weeks
This curriculum is an inter-disciplinary program, tailored for officers and civilian employees of other countries and the U.S. National Guard. The program is designed to meet three related needs. First, the program gives students the skills they need to understand the security problems confronting their own democracies in the post-Cold War environment, and the challenges of bringing about change in the defense sector. Second, the program offers an in-depth understanding of civil-military relations. Finally, the program prepares students to resolve the civil-military issues raised by participation in U.N. peacekeeping operations, membership in the Partnership for Peace and other alliances, and security cooperation among nations. International students in this program are fully integrated with the U.S. students at the Naval Postgraduate School. As part of the degree, students are required to complete a thesis that deals with a significant civil-military relations issue in the sponsoring country.

COMBATING TERRORISM POLICY AND STRATEGY (693)

Curriculum 693 (MA)
MASL# P173201

2017
Course Report: 19 Mar 17 18 Jun 17 10 Sep 17 26 Dec 17
Course Convene: 03 Apr 17 03 Jul 17 25 Sep 17 04 Jan 18
Course Complete: 15 Jun 18 21 Sep 18 14 Dec 18 29 Mar 19

2018
Course Report: 18 Mar 18 17 Jun 18 09 Sep 18 26 Dec 18
Course Convene: 02 Apr 18 02 Jul 18 24 Sep 18 03 Jan 19
Course Complete: 14 Jun 19 27 Sep 19 14 Dec 19 28 Mar 20

Course Length: 65 weeks
This five-quarter curriculum provides an understanding of the nature and dynamics of terrorist organizations, and the domestic and international variables involved in the formulation of counterterrorist policy. The curriculum allows the students to combine a regional focus with comparative courses that discuss terrorist organizations and operations, the financing of terror, legal and policing developments in counterterrorism, intelligence, and the military role in homeland defense. The NSA department is a unique environment in which to pursue this course of studies since its student body is
inherently joint and combined, providing students with both a stimulating intellectual environment and an opportunity to establish networks and life-long working relationships with fellow officers from other services and countries.

**DEFENSE PLANNING CERTIFICATE (GRADUATE-LEVEL EDUCATION FOR DEFENSE PLANNERS) (245)**

Curriculum 245  
MASL# P170006

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Report:</td>
<td>26 Dec 17</td>
<td>26 Dec 18</td>
</tr>
<tr>
<td>Course Convene:</td>
<td>01 Jan 18</td>
<td>03 Jan 19</td>
</tr>
<tr>
<td>Course Complete:</td>
<td>30 Mar 18</td>
<td>29 Mar 19</td>
</tr>
</tbody>
</table>

Course Length: 13 weeks  
Note: Minimum enrollment of seven students required.

Defense planning is a critical capability to ensure effective and efficient performance by an armed force, as well as to ensure the civil control of armed forces. In order to support the ability of the U.S. Department of Defense and U.S. Department of State to expand the ability to educate foreign officials in defense planning, the U.S. Naval Postgraduate School has initiated an International Defense Planning Certificate from the Department of National Security Affairs.

The International Defense Planning Certificate program is a resident program that will be delivered annually during NPS’s winter quarter. The program is intended to provide international students with a compact introduction to the processes and methods of effective defense planning, as well as analytical tools they can employ to evaluate and improve defense planning in their own countries. Students are required to have completed a Bachelor's degree at an accredited university, and to possess substantial fluency in English, as demonstrated by a minimum total score of 90 on the internet-based Test of English as a Foreign Language (TOEFL), or a score of 560 on the written test.

The program consists of four (4) graduate level courses / seminars that have been organized to appeal to mid- and higher-level civilian defense officials, as well as military officers with responsibilities for planning, organization, and management of armed forces. Sponsoring country teams and recipient countries are encouraged to engage in discussions with the Certificate’s organizers prior to sending students to Monterey to design country-specific research and analysis projects to fit with on-going national defense reform efforts. The program will require the participating students to take four seminars: 1) Comparative Defense Planning (NS3246), 2) Comparative Defense Organization and Management (NS3245), 3) War in the Modern World (NS3000), and 4) Strategic Planning and the Military (NS3230).

Students wishing to pursue a Master’s Degree in the Department of National Security Affairs can apply the credits gained in this Certificate Program to that degree.

**DOCTOR OF PHILOSOPHY IN SECURITY STUDIES (694)**

Curriculum 694  
MASL# P173401 (PhD – 3 year program)

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Report:</td>
<td>18 Jun 17</td>
<td>17 Jun 18</td>
</tr>
<tr>
<td>Course Convene:</td>
<td>03 Jul 17</td>
<td>02 Jul 18</td>
</tr>
<tr>
<td>Course Complete:</td>
<td>19 Jun 20</td>
<td>18 Jun 21</td>
</tr>
</tbody>
</table>
MASL# P173402 (PhD – 4 year program)

<table>
<thead>
<tr>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Report:</td>
<td>26 Dec 17</td>
</tr>
<tr>
<td>Course Convene:</td>
<td>03 Jul 17</td>
</tr>
<tr>
<td>Course Complete:</td>
<td>18 Jun 21</td>
</tr>
<tr>
<td></td>
<td>17 Dec 21</td>
</tr>
</tbody>
</table>

Course Length: (PhD) 156/208 weeks

Security Studies is a multidisciplinary field based on the traditional academic disciplines of Political Science, History, and Economics. The doctoral program in Security Studies seeks to equip students with the skills and knowledge required to do work of the highest professional quality in these areas, with emphasis on understanding the challenges and characteristics of modern security and defense policy. Doctoral training is inherently open-ended, being dependent upon completion of a Ph.D. dissertation of significant scope and originality. Successful completion of the program requires one year of in-residence course work beyond the Master's degree, and the completion of a doctoral dissertation of sufficient scope and quality to constitute an original and independent contribution to knowledge. A normal Ph.D. tour is three years, of which the last two are spent conducting research and writing the dissertation. Given the open-ended nature of dissertation research, however, there can be no assurance that the program can be completed in three years.

Admission to the Ph.D. program in Security Studies is available to officers of all the U.S. armed services, civilian federal employees, and to individuals sponsored by selected allied nations. Applicants must possess a Master's Degree in Security Studies or a closely-allied field (Political Science, History, Economics, etc.) by the time doctoral instruction begins.

General Degree Requirements: The NSA doctoral program requires one year of course work beyond the Master's degree. Courses are tailored to develop the candidate's analytical and methodological foundations in two of the following four disciplines: international relations, international political economy, comparative politics, and history. Additionally, elective courses and directed readings assist students in developing their dissertation topic, and prepare them to take required written and oral qualifying examinations.

STRATEGIC STUDIES (688)

Curriculum 688 (MA)
MASL# P179035

<table>
<thead>
<tr>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Report:</td>
<td>26 Dec 17</td>
</tr>
<tr>
<td>Course Convene:</td>
<td>03 Jul 17</td>
</tr>
<tr>
<td>Course Complete:</td>
<td>18 Jun 21</td>
</tr>
<tr>
<td></td>
<td>17 Dec 21</td>
</tr>
</tbody>
</table>

Course Length: 65 weeks

Strategy is concerned with the use of force to further the ends of policy. The aim of this curriculum is to produce students with a thorough understanding of the relationship between force and politics, and of the relationship of force to other instruments by which the ends of policy may be pursued. Graduates will possess a comprehensive knowledge of US national security and defense policy and military strategy. They will have the ability to develop and coordinate national and military strategy; to develop concepts and plans to employ military forces at the national and theater levels; to
write strategic- and operational-level vision and guidance documents; and to formulate, articulate, and coordinate the employment of all dimensions of military power to support the ends of American national policy.

Strategic Studies is a multi-disciplinary degree program grounded in the fields of history, international relations, comparative politics, and political economy, and requires completion of a Master’s thesis as the capstone degree requirement. Satisfactory completion of the four-course Naval War College JPME sequence is required for Navy officers. Students who are not required, or do not desire, to complete JPME are expected to develop a coherent four-course elective sequence in its place.

GRADUATE SCHOOL OF BUSINESS AND PUBLIC POLICY (GSBPP)

ACQUISITION AND CONTRACT MANAGEMENT (815)

Curriculum 815 (MBA)
MASL# P179908

2017
Course Report: 18 Dec 16 18 Jun 17 26 Dec 17
Course Convene: 05 Jan 17 03 Jul 17 04 Jan 18
Course Complete: 15 Jun 18 14 Dec 18 14 Jun 19

2018
Course Report: 17 Jun 18 26 Dec 18
Course Convene: 02 Jul 18 03 Jan 19
Course Complete: 15 Dec 19 13 Jun 20

Course Length: 78 weeks
This is a six-quarter interdisciplinary program which integrates mathematics, accounting, economics, finance, behavioral science, management theory, operations/systems analysis and specific courses in acquisition and contracting. Student input includes officers and civilians from all DOD services, the Coast Guard and other nations. The curriculum is designed to provide officers and civilians with the skills to serve effectively in hardware systems, buying offices, field contracting offices, contract administration offices and contracting policy offices.

DEFENSE SYSTEMS MANAGEMENT – INTERNATIONAL (818)

Curriculum 818 (MBA)
MASL# P176002

2017
Course Report: 18 Dec 16 18 Jun 17 26 Dec 17
Course Convene: 05 Jan 17 03 Jul 17 04 Jan 18
Course Complete: 15 Jun 18 14 Dec 18 14 Jun 19

2018
Course Report: 17 Jun 18 26 Dec 18
Course Convene: 02 Jul 18 03 Jan 19
Course Complete: 15 Dec 19 19 Jun 20
Course Length: 78 weeks
This program is designed to provide officers with fundamental interdisciplinary techniques of quantitative problem-solving methods, behavioral and management science, economic analysis and financial management to enable the officers to evaluate the written research, study and analysis product of others throughout their careers. The curriculum will further provide the officers with the specific functional skills required to effectively manage. The curriculum integrates mathematics, accounting, economics, behavioral science, management theory, operations/systems analysis and a subspecialty concentration area into an understanding of the process by which the defense mission is accomplished. Specialty concentration areas are selected by the student by their choice of course options. The 818 curriculum allows students to design a program of course work specific to management effectiveness in the host country’s military system. The student may elect to specialize in the relevant portion of a functional area such as financial, logistics, human resources and organization, or manpower and personnel analysis. Or, the student may choose to follow a general management program which would include an overall balance of courses from many areas.

FINANCIAL MANAGEMENT (837)

Curriculum 837 (MBA)
MASL# P179127

2017
Course Report: 18 Dec 16 18 Jun 17 26 Dec 17
Course Convene: 05 Jan 17 03 Jul 17 04 Jan 18
Course Complete: 15 Jun 18 14 Dec 18 14 Jun 19

2018
Course Report: 17 Jun 18 26 Dec 18
Course Convene: 02 Jul 18 03 Jan 19
Course Complete: 13 Dec 19 19 Jun 20

Course Length: 78 weeks
The objective of the Financial Management Curriculum is to prepare officers for business and financial positions within the Navy. Financial Managers assist the services’ decision-making processes at all levels by providing accurate, timely and relevant information. They are concerned with the optimal allocation of information. They are concerned with optimal allocation of human, physical and financial resources to achieve the services’ goals and objectives while assuring efficient and effective expenditure of public funds. Graduate courses cover topics such as financial reporting standards, cost standards, cost analysis, budgeting, internal control, auditing, management planning and control systems, quantitative techniques used in planning and control, and the Planning Program and Budgeting Systems used within the Department of Defense. 

Graduates of the Financial Management Curriculum will be prepared for assignment to positions in budgeting, accounting, business and financial management, and internal control and auditing.

INFORMATION SYSTEMS MANAGEMENT (870)

Curriculum 870 (MBA)
MASL# P179221

2017
Course Report: 18 Dec 16 18 Jun 17 26 Dec 17
Course Convene: 05 Jan 17 03 Jul 17 04 Jan 18
Course Complete: 15 Jun 18 14 Dec 18 14 Jun 19

NAVAL POSTGRADUATE SCHOOL
INTERNATIONAL GRADUATE PROGRAMS CATALOG
The Information Age has generated a revolution in the means in which we conduct business and warfare. New technologies have changed the traditional views of the marketplace, supply chain management, and logistics. As the range and complexity of computer applications have grown, the need to manage and exploit those resources has increased. This curriculum provides both the technical skills and business acumen to deal with a constantly evolving digital world. The information Systems Management (MBA) curriculum provides the knowledge skills and competencies to:

- Manage the acquisition of Information Systems.
- Manage Information Systems and infrastructure support afloat and ashore.
- Solve Information Systems engineering and management problems individually and in teams.
- Effectively manage and lead in today’s constantly changing digital world.
- Develop and implement effective strategies and policies to take advantage of technological opportunities and mitigate risk.
- Assimilate new technologies and transform organizations, processes, and strategies to compete in the marketplace or on the battlefield.

LOGISTICS MANAGEMENT CURRICULA (819/827)

Logistics Management includes two curricula, each a concentration area within the MBA degree program:

Curriculum 819 (MBA) Supply Chain Management       MASL# P179907
Curriculum 827 (MBA) Material Logistics Support Management  MASL# P179913

The Logistics Management curricula are interdisciplinary, integrating mathematics, accounting, economics, management theory, operations analysis and the specialty concentration into an understanding of the process by which the defense mission is accomplished. The program is designed to provide the officer with fundamental interdisciplinary techniques of quantitative problem-solving methods, behavioral and management science, economic analysis, and financial management; furthermore, it is intended to provide the officer with a Defense Systems-oriented graduate management education and to provide the officer with the specific functional skills required to effectively manage in this subspecialty area.

The objective of these curricula is to prepare officers for logistics system positions. The Logistics Management curricula emphasize all of the aspects for providing integrated logistics support of military systems. Skills resulting from the curricula will prepare those responsible for managing the various segments of a military system’s life cycle from initial
planning for support to fielding the system, through sustaining operations to phase out. These curricula additionally emphasize the management of military owned inventories at the three levels of wholesale, intermediate and retail customer support, and worldwide transportation and distribution systems. The Logistics concentration subjects are significant components of the military supply chain and each provides unique and relevant education that meets the critical needs of the armed services. The specialized logistics courses concentrate on studies in production and project management, inventory management, integrated logistics support, procurement and contract administration, systems acquisition and logistics strategic planning.

### MANPOWER SYSTEMS ANALYSIS (847)

**Curriculum 847 (MS)**  
MASL# P179105

<table>
<thead>
<tr>
<th>Year</th>
<th>Course Report</th>
<th>Course Convene</th>
<th>Course Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>18 Jun 17</td>
<td>03 Jul 17</td>
<td>29 Mar 19</td>
</tr>
<tr>
<td>2018</td>
<td></td>
<td>17 Jun 18</td>
<td>28 Mar 20</td>
</tr>
</tbody>
</table>

**Course Length:** 91 weeks  
This program is designed to fill the leadership roles of military manpower management. MSA is an extremely analytical curriculum intended to develop skills necessary to perform and evaluate manpower analyses. As such, the curriculum emphasizes mathematical, statistical, and other quantitative methods. Areas covered include an understanding of MSA policy development, compensation systems, productivity analysis, enlistment supply and retention models, manpower requirements determination processes, career mix, enlistment incentives, reenlistment incentives, training effectiveness measures and hardware/manpower trade-offs. Students gain familiarity with current models and methods of MSA analysis as well as military MSA organizations and issues.

### RESOURCE PLANNING AND MANAGEMENT FOR INTERNATIONAL DEFENSE (820)

**Curriculum 820 (MBA)**  
MASL# P179905

<table>
<thead>
<tr>
<th>Year</th>
<th>Course Report</th>
<th>Course Convene</th>
<th>Course Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>18 Dec 16</td>
<td>05 Jan 17</td>
<td>15 Jun 18</td>
</tr>
<tr>
<td></td>
<td>18 Jun 17</td>
<td>03 Jul 17</td>
<td>14 Dec 18</td>
</tr>
<tr>
<td></td>
<td>26 Dec 17</td>
<td>04 Jan 18</td>
<td>14 Jun 19</td>
</tr>
<tr>
<td>2018</td>
<td>17 Jun 18</td>
<td>02 Jul 18</td>
<td>13 Dec 19</td>
</tr>
<tr>
<td></td>
<td>26 Dec 18</td>
<td>03 Jan 19</td>
<td>19 Jun 20</td>
</tr>
</tbody>
</table>

**Course Length:** 78 weeks  
This is an interdisciplinary program which integrates mathematics, accounting, economics, behavioral science, organization and management theory, operations/systems analysis, managerial communications, and international law into an understanding of the process by which the defense mission is accomplished. The course of studies explores the interface among international politics, national security objectives, civil-military relations, resource planning and management, and synthesizes the political, technological, economic, cultural, social and ideological forces influencing international defense. Students receive extensive exposure to human rights issues. It provides techniques of
quantitative problem-solving methods, behavioral and management science, economic analysis and financial management which will enable graduates to evaluate the written research, study and analysis products of others throughout their careers.

**SYSTEMS ACQUISITION MANAGEMENT (816)**

Curriculum 816 (MBA)
MASL# P179909

2017
Course Report: 18 Dec 16 18 Jun 17 26 Dec 17
Course Convene: 05 Jan 17 03 Jul 17 04 Jan 18
Course Complete: 15 Jun 18 14 Dec 18 14 Jun 19

2018
Course Report: 17 Jun 18 26 Dec 18
Course Convene: 02 Jul 18 03 Jan 19
Course Complete: 15 Dec 19 19 Jun 20

Course Length: 91 weeks
This is a six-quarter interdisciplinary program designed to integrate business principles, management theory, operations/systems analysis, and to Defense acquisition management and intensive exposure to the fundamental principles of the acquisition environment. The courses in this curriculum present the structure of acquisition management, the decisions and problems facing the defense acquisition manager, the various forces at work within the industry and Government, and the impact of acquisition policies and strategies. Student input includes officers and civilians from all DoD services, the Coast Guard, and other nations.

**GRADUATE SCHOOL OF OPERATIONAL AND INFORMATION SCIENCES**

**INFORMATION SYSTEMS AND TECHNOLOGY (370)**

Curriculum 370 (MS)
MASL# P179904

2017
Course Report: 10 Sep 17 25 Sep 17 27 Sep 19
Course Convene: 25 Sep 17 24 Sep 18
Course Complete: 27 Sep 19 25 Sep 20

2018
Course Report: 09 Sep 18
Course Convene: 24 Sep 18
Course Complete: 25 Sep 20

Course Length: 104 weeks
This curriculum provides officers with the knowledge of information systems technology to include computer and telecommunications systems, software engineering, networked and distributed applications, database management systems and decision support systems in military services. Students will also gain proficiency in information systems, economics and management necessary for the critical management decisions needed in the development and utilization of complex and evolving computer-based military systems. Information Systems Technology is an interdisciplinary, graduate-level master’s program integrating mathematics, accounting, statistics, computer science, information systems, communications engineering, networks and management discipline.
COURSES AVAILABLE UNDER FOREIGN MILITARY SALES (FMS) or INTERNATIONAL MILITARY EDUCATION AND TRAINING (IMET) FUNDING

APPLIED MATHEMATICS (380)

Curriculum 380 (MS)
MASL# P179115

<table>
<thead>
<tr>
<th>Year</th>
<th>Course Report</th>
<th>Course Convene</th>
<th>Course Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>18 Jun 17</td>
<td>03 Jul 17</td>
<td>14 Jun 19</td>
</tr>
<tr>
<td>2018</td>
<td>17 Jun 18</td>
<td>02 Jul 18</td>
<td>19 Jun 20</td>
</tr>
</tbody>
</table>

Course Length: 104 weeks

This program is designed to meet the needs of the Department of Defense for graduates who are skilled in applying concepts of higher mathematics. The objective of the program is to equip an officer with the skill to analyze a military problem, formulate it in mathematical terms, solve or approximate a solution, and interpret and present the results.

The value of graduate education in mathematics lies in the vast breadth of its applicability. The officer with advanced education in mathematics possesses skills in problem solving, modeling, abstraction, optimization, and analysis that are sufficiently general that they apply in many arenas and never lose their currency in the face of changing technology and yet-to-be-identified needs. Graduate education in mathematics is a career-long enabler. Students in the Applied Mathematics curriculum will receive a solid mathematical foundation as they transition into graduate curricula emphasizing relevant and modern advanced mathematical techniques. Students will be encouraged to develop and utilize skills in analysis, reasoning, creativity, and exposition as they acquire knowledge of mathematics and its applications.

The officer will complete courses in the following fundamental areas of Mathematics, developing sufficient mastery to qualify for teaching Mathematics at the undergraduate level: Single, Multivariate, and Vector Calculus; Linear Algebra and Algebraic Structures; Logic and Discrete Mathematics; Real and Complex Analysis; Modern Applied Algebra and Number Theory; Numerical Analysis; Mathematical Modeling in Applied Mathematics; Ordinary and Partial Differential Equations.
COMBAT SYSTEMS (533)

Curriculum 533 (MS/PhD)

MASL# P179906 (MS)

<table>
<thead>
<tr>
<th>Year</th>
<th>Course Report</th>
<th>Course Convene</th>
<th>Course Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>18 Jun 17</td>
<td>03 Jul 17</td>
<td>14 Jun 19</td>
</tr>
<tr>
<td>2018</td>
<td>17 Jun 18</td>
<td>02 Jul 18</td>
<td>19 Jun 20</td>
</tr>
</tbody>
</table>

MASL# P179170 (PhD – 3 year program)

<table>
<thead>
<tr>
<th>Year</th>
<th>Course Report</th>
<th>Course Convene</th>
<th>Course Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>18 Jun 17</td>
<td>03 Jul 17</td>
<td>19 Jun 20</td>
</tr>
<tr>
<td>2018</td>
<td>17 Jun 18</td>
<td>02 Jul 18</td>
<td>18 Jun 21</td>
</tr>
</tbody>
</table>

MASL# P179541 (PhD – 4 year program)

<table>
<thead>
<tr>
<th>Year</th>
<th>Course Report</th>
<th>Course Convene</th>
<th>Course Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>18 Jun 17</td>
<td>03 Jul 17</td>
<td>18 Jun 21</td>
</tr>
<tr>
<td>2018</td>
<td>17 Jun 18</td>
<td>02 Jul 18</td>
<td>17 Jun 22</td>
</tr>
</tbody>
</table>

Course Length: (MS) 104 weeks / (PhD) 156/208 weeks

This program is designed to meet the needs of the military services for an officer having a broad-based advanced technical education applicable to combat systems design, development, test and evaluation, acquisition, operation, and support. The student does not earn a degree in Combat Systems. The majority of students earn a degree in Physics or Applied Physics. Degree specializations in Software Engineering, Mechanical Engineering, or Electrical Engineering are also available. Included in the core of the program are courses on electromagnetic radiation, signal processing, optoelectronics, servo and computer control systems, explosives and warheads, fluid dynamics of weapons, combat simulation, quantum devices, detection and engagement elements, combat systems integration, and computing resources for advanced combat systems. Additionally, the officer will take a sequence of four or more courses in one of the following concentration areas: electromagnetic sensors systems, weapons and effects, underwater acoustic systems, tactical missile systems, total ships systems engineering, or an engineering area related to combat systems. The officer will also conduct thesis research on a military relevant technical problem.

Specific areas of specialization include:

MS Applied Physics
- Military Sensors
- Acoustics
- Weapons and Effects

MS Engineering Acoustics
- Signal Processing
- Propagation

MS AE - Missile Design

MS Computer Science
- Artificial Intelligence - Robotics

MSEE
- Electronic Warfare
- Communications Systems
- Computer Systems
- Software Engineering (MASL P179130)
COMPUTER SCIENCE (368)

Curriculum 368 (MS/PhD)

MASL# P177713 (MS)

<table>
<thead>
<tr>
<th>Year</th>
<th>Course Report</th>
<th>Course Convene</th>
<th>Course Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>19 Mar 17</td>
<td>03 Apr 17</td>
<td>21 Sep 18</td>
</tr>
<tr>
<td></td>
<td>10 Sep 17</td>
<td>25 Sep 17</td>
<td>29 Mar 19</td>
</tr>
<tr>
<td>2018</td>
<td>19 Mar 18</td>
<td>02 Apr 18</td>
<td>27 Sep 19</td>
</tr>
<tr>
<td></td>
<td>09 Sep 18</td>
<td>24 Sep 18</td>
<td>28 Mar 20</td>
</tr>
</tbody>
</table>

MASL# P179173 (PhD – 3 year program)

<table>
<thead>
<tr>
<th>Year</th>
<th>Course Report</th>
<th>Course Convene</th>
<th>Course Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>19 Mar 17</td>
<td>03 Apr 17</td>
<td>27 Mar 20</td>
</tr>
<tr>
<td></td>
<td>10 Sep 17</td>
<td>25 Sep 17</td>
<td>25 Sep 20</td>
</tr>
<tr>
<td>2018</td>
<td>19 Mar 18</td>
<td>02 Apr 18</td>
<td>26 Mar 21</td>
</tr>
<tr>
<td></td>
<td>09 Sep 18</td>
<td>24 Sep 18</td>
<td>24 Sep 21</td>
</tr>
</tbody>
</table>

MASL# P179541 (PhD – 4 year program)

<table>
<thead>
<tr>
<th>Year</th>
<th>Course Report</th>
<th>Course Convene</th>
<th>Course Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>19 Mar 17</td>
<td>03 Apr 17</td>
<td>26 Mar 21</td>
</tr>
<tr>
<td></td>
<td>10 Sep 17</td>
<td>25 Sep 17</td>
<td>24 Sep 21</td>
</tr>
<tr>
<td>2018</td>
<td>19 Mar 18</td>
<td>02 Apr 18</td>
<td>25 Mar 22</td>
</tr>
<tr>
<td></td>
<td>09 Sep 18</td>
<td>24 Sep 18</td>
<td>23 Sep 22</td>
</tr>
</tbody>
</table>

Course Length: (MS) 91 weeks / (PhD) 156/208 weeks

The Computer Science curriculum is designed to provide the officer with the technical knowledge and skills necessary to specify, evaluate and manage computer system design; to provide technical guidance in applications ranging from data processing to tactical embedded systems; to educate the officer in the analysis and design methodologies appropriate for hardware, software and firmware; and to provide the officer with practical experience in applying modern computer equipment and research techniques to solve military problems. The principles presented in the curriculum have two layers: computing mechanics deals with the workings of computations, communications, computers, and memories; and computing design deals with the ways of organizing software systems for simplicity, reliability, performance, security, and value.

The curriculum also provides for concrete experience in computing practices—the skills and ways of thinking that mark a computing professional. These include programming, engineering of systems, modeling, and innovating. A unique course offering called Technology, Innovation, and Leadership teaches the practices and discipline of innovation. The two dimensions—computing principles and practices—define the space in which the core technologies of computing exist and serve application domains: algorithms, architecture, artificial intelligence, database, networking, operating systems, security, and more.

Specialization Track Options. Track Core Requirement courses will be determined by the selection of one of the following specialization track options.

- Information Security and Assurance - provides knowledge in all areas of Information Security (INFOSEC) and develops the necessary skills for those who will be involved in development, evolution, or implementation of secure computer systems.
- Network and Mobile Systems - provides fundamental and advanced knowledge in network architecture and system software for real-time and multicomputer systems and in the rapidly growing areas of wireless networking, mobile devices, and related topics, including mobile computing and wireless security.
• Autonomous Systems - provides an understanding of artificial intelligence and human factors techniques for creating highly capable software agents that interact effectively with human users.
• Software Engineering and Architecture - provides knowledge of all aspects of software development and develops skills needed to efficiently and reliably implement military systems and application software using the best available tools and techniques.
• Cyber Systems and Operations – provides knowledge in all areas of security provisions, information assurance and situational awareness for computer systems, networks and ICS, and their integration with Defensive Cyber Operations, Offensive Cyber Operations, and DoD Global Information Grid Operations.
• CS-MOVES Option - Students interested in an MSCS degree with a focus on modeling, simulation, and virtual environments may choose the CS-MOVES Option as their track. Specialization sequence course work will be coordinated by the student working with his/her MOVES thesis advisor, and must be approved as part of the thesis proposal.

**DEFENSE SYSTEMS ANALYSIS (817)**

Curriculum 817  
MASL# P179618

**2017**
Course Report: 18 Jun 17 26 Dec 17  
Course Convene: 03 Jul 17 04 Jan 18  
Course Complete: 14 Dec 18 14 Jun 19

**2018**
Course Report: 17 Jun 18 27 Dec 18  
Course Convene: 02 Jul 18 03 Jan 19  
Course Complete: 13 Dec 19 19 Jun 20

Course Length: 78 weeks
This curriculum is an interdisciplinary program that integrates mathematics, accounting, economics, behavioral science, management theory, operations/systems analysis, and a chosen subspecialty to further students' understanding of the process by which the defense mission is accomplished. This curriculum is also structured to give students the opportunity to design their own program of study.

**ELECTRONIC SYSTEMS ENGINEERING (590)**

Curriculum 590 (MS/PhD)  
MASL# P177712 (MS)

**2017**
Course Report: 19 Mar 17 18 Jun 17 10 Sep 17 26 Dec 17  
Course Convene: 03 Apr 17 03 Jul 17 25 Sep 17 04 Jan 18  
Course Complete: 29 Mar 19 14 Jun 19 27 Sep 19 13 Dec 19

**2018**
Course Report: 18 Mar 18 17 Jun 18 10 Sep 17 26 Dec 17  
Course Convene: 02 Apr 18 02 Jul 18 25 Sep 17 04 Jan 18  
Course Complete: 27 Mar 20 19 Jun 20 25 Sep 20 18 Dec 20
MASL# P179109 (PhD – 3 year program)

<table>
<thead>
<tr>
<th>Year</th>
<th>Course Report</th>
<th>Course Convene</th>
<th>Course Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>19 Mar 17</td>
<td>03 Apr 17</td>
<td>27 Mar 20</td>
</tr>
<tr>
<td></td>
<td>18 Jun 17</td>
<td>03 Jul 17</td>
<td>19 Jun 20</td>
</tr>
<tr>
<td></td>
<td>10 Sep 17</td>
<td>25 Sep 17</td>
<td>25 Sep 20</td>
</tr>
<tr>
<td></td>
<td>26 Dec 17</td>
<td>04 Jan 18</td>
<td>18 Dec 20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Course Report</th>
<th>Course Convene</th>
<th>Course Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>18 Mar 18</td>
<td>02 Apr 18</td>
<td>26 Mar 21</td>
</tr>
<tr>
<td></td>
<td>17 Jun 18</td>
<td>02 Jul 18</td>
<td>18 Jun 21</td>
</tr>
<tr>
<td></td>
<td>10 Sep 17</td>
<td>25 Sep 17</td>
<td>24 Sep 21</td>
</tr>
<tr>
<td></td>
<td>26 Dec 17</td>
<td>04 Jan 18</td>
<td>17 Dec 21</td>
</tr>
</tbody>
</table>

MASL# P179539 (PhD – 4 year program)

<table>
<thead>
<tr>
<th>Year</th>
<th>Course Report</th>
<th>Course Convene</th>
<th>Course Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>19 Mar 17</td>
<td>03 Apr 17</td>
<td>26 Mar 21</td>
</tr>
<tr>
<td></td>
<td>18 Jun 17</td>
<td>03 Jul 17</td>
<td>18 Jun 21</td>
</tr>
<tr>
<td></td>
<td>10 Sep 17</td>
<td>25 Sep 17</td>
<td>24 Sep 21</td>
</tr>
<tr>
<td></td>
<td>26 Dec 17</td>
<td>04 Jan 18</td>
<td>17 Dec 21</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Course Report</th>
<th>Course Convene</th>
<th>Course Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>18 Mar 18</td>
<td>02 Apr 18</td>
<td>25 Mar 22</td>
</tr>
<tr>
<td></td>
<td>17 Jun 18</td>
<td>02 Jul 18</td>
<td>17 Jun 22</td>
</tr>
<tr>
<td></td>
<td>10 Sep 17</td>
<td>25 Sep 17</td>
<td>23 Sep 22</td>
</tr>
<tr>
<td></td>
<td>26 Dec 17</td>
<td>04 Jan 18</td>
<td>16 Dec 22</td>
</tr>
</tbody>
</table>

Course Length: (MS) 104 weeks / (PhD) 156/208 weeks

This curriculum is designed to educate officers in current electronics technology and its application to modern naval warfare. It establishes a broad background of basic engineering knowledge, leading to selected advanced studies in electronic systems, ship/weapon control systems, and communication/information processing applicability. It will enhance individual performance in all duties through a naval career, including operational billets, technical management assignments and policy making positions, thereby preparing the officer for progressively increased responsibility including command, both ashore and afloat. There are several tracks or areas of concentration within the curriculum that are available. They include:

- The Communications Systems option is designed to provide an advanced education in modern communication engineering topics such as digital communications, spread spectrum communication including anti-jam and low probability of intercept applications, forward error correction coding, and satellite communications.
- The Computer Systems area of concentration is designed to provide an advanced education in the design, implementation, and application of military computer systems, including such topics as logic circuits, logic design and synthesis, microprocessors, computer and digital systems architecture, military computer architectures, fault tolerant computing, high speed networking, silicon VLSI and gallium arsenide digital IC design, parallel processing, and the hardware/software interface.
- The Cyber Engineering specialty addresses a range of diverse topics including Cyber Network and Physical Infrastructures, Reverse Engineering in Electronic systems, Wireless Communications Network Security and Covert communications.
- The Electromagnetic Systems option provides an advanced education in the application of electromagnetic phenomenology to the design and analysis of military systems used for communications, interrogation and signal intercept, and targeting. Courses are offered in a range of areas including antennas, propagation, scattering and RCS control, microwave and millimeter wave devices, as well as in modern numerical methods for analysis and simulation of electromagnetic systems.
- The Guidance, Control, and Navigation Systems area of concentration is designed to provide and advanced education in the modeling and simulation advanced dynamic systems, the current state of knowledge regarding state estimation (linear and nonlinear filtering), system identification, and the control of dynamic systems, and
to unite the theory with military applications. Course in specific areas of military application currently include military robotics, missile guidance and control, and integrated target tracking.

- The Joint Services Electronic Warfare option is designed to provide advanced education in the evolving technology and systems integration which support modern electronic warfare. Courses in specific areas of relevance include sensor and data fusion, radar and IR/EO systems, radar and communications ECM/ECCM, RCS prediction and reduction, military applications of space.

- The Power Systems option is designed to provide education in the analysis, design, simulation, and control of power electronic and electromechanical components and integrated topologies common to existing and proposed military systems.

- The Signal Processing Systems option is designed to provide knowledge of algorithms and design of systems for analysis and processing of signals and images encountered in communications, control, surveillance, radar, sonar, and underwater acoustics.

### ENGINEERING SCIENCE (460) – REFRESHER QUARTER

**Curriculum 460**  
MASL# P174233

**2017**  
Course Report: 19 Mar 17   18 Jun 17   10 Sep 17   26 Dec 17  
Course Convene: 03 Apr 17   03 Jul 17   25 Sep 17   04 Jan 18  
Course Complete: 16 Jun 17   22 Sep 17   15 Dec 17   30 Mar 18

**2018**  
Course Report: 18 Mar 18   17 Jun 18   09 Sep 18   27 Dec 18  
Course Convene: 02 Apr 18   02 Jul 18   24 Sep 18   03 Jan 19  
Course Complete: 15 Jun 18   21 Sep 18   14 Dec 18   29 Mar 19

**Course Length: 13 weeks**  
Candidates not having the required qualifications for direct entry to technical/engineering curricula may be eligible to enter this technical refresher quarter program where they will receive courses in math/calculus, physics and computer science. The refresher sequence is normally 13 weeks (one quarter) in length; however, there are occasions when a student may be assigned two quarters of refresher prior to entering a technical curriculum.
IDENTITY MANAGEMENT CERTIFICATE (278)

Curriculum 278  
MASL# P170028

2017
Course Report: 19 Mar 17  18 Jun 17  10 Sep 17  26 Dec 17  
Course Convene: 03 Apr 17  03 Jul 17  25 Sep 17  04 Jan 18  
Course Complete: 22 Sep 17  15 Dec 17  30 Mar 18  15 Jun 18

2018
Course Report: 18 Mar 18  17 Jun 18  09 Sep 18  26 Dec 18  
Course Convene: 02 Apr 18  02 Jul 18  24 Sep 18  02 Jan 19  
Course Complete: 21 Sep 18  14 Dec 18  29 Mar 19  14 Jun 19

Course Length: 26 weeks
Identity Management (IDM) is a growing concern throughout defense, government, and private sector organizations. It includes an infrastructure that supports the identification of humans in physical space, and the logical identification of human and non-human subjects, hardware, and software in cyber space. The IDM Certificate is offered as a two-quarter program and is conducted in a hybrid mode that involves a one-week program of intense IDM education at NPS followed by 9 weeks of remote learning, and culminates with an on-site (NPS campus) course work at the end of the academic quarter. The hybrid approach reduces student attrition and has resulted in considerable esprit de corps and camaraderie among the students who represent a mixture of military and government civilians.

The IDM Certificate takes approximately 6 months, to complete. Upon completion of the courses with adequate grades, students may apply IDM course credits toward Identity Management specialization tracks in either the Computer Science or Information Sciences degree programs. A sponsoring country would be required to fund a full cohort of at least 10 students.

Required courses:
CS3686 Identity Management Infrastructure  
CS3699 Biometrics  
IS3710 Identity Management Operations  
IS3720 Identity Management Policy

HOMELAND SECURITY AND DEFENSE (691)

Curriculum 691  
MASL# P173027

2017
Course Report: 19 Mar 17  18 Jun 17  10 Sep 17  26 Dec 17  
Course Convene: 03 Apr 17  03 Jul 17  25 Sep 17  04 Jan 18  
Course Complete: 15 Jun 18  21 Sep 18  14 Dec 18  29 Mar 19

2018
Course Report: 18 Mar 18  17 Jun 18  09 Sep 18  27 Dec 18
Course Convene: 02 Apr 18  02 Jul 18  24 Sep 18  03 Jan 19
Course Complete: 14 Jun 19  27 Sep 19  14 Dec 19  27 Mar 20

Course Length: 65 weeks
Homeland Security and Defense provides military officers with a theoretical and practical understanding of unconventional threats within the framework of the domestic security environment, and organizational strategies to deal with such threats. It explores the military's primary role in deterring and preventing attacks on domestic territory and in consequence management should such attacks occur. National strategic interests and objectives; the roles missions, structures, and effectiveness of Homeland Security organizations and intelligence organizations, as well as potential threats to domestic security are examined.

Curriculum 691 is a five-quarter (15-month) program. Students may enter in any quarter. Resulting degree is a Master of Arts in Security Studies (Homeland Security and Defense).

Course Pre-requisites: Candidates for the program must have achieved the following: a baccalaureate degree with an undergraduate 3.0 grade point average for all undergraduate coursework or awarded a graduate degree. International candidates must have a TOEFL score of 90 or above. International candidates must be in national security positions and must be nominated by their appropriate government agency to the military training office at the U.S. Embassy in their country as specified in the US Joint Security Cooperation Education and Training regulations.

HUMAN SYSTEMS INTEGRATION (HSI) (362)

Curriculum 362 (MS)
MASL# P179107

<table>
<thead>
<tr>
<th>Year</th>
<th>Course Report</th>
<th>Course Convene</th>
<th>Course Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>10 Sep 17</td>
<td>25 Sep 17</td>
<td>20 Sep 19</td>
</tr>
<tr>
<td>2018</td>
<td>09 Sep 18</td>
<td>24 Sep 18</td>
<td>25 Sep 20</td>
</tr>
</tbody>
</table>

Course Length: 104 weeks
This program, the first of its kind in the nation, focuses on the integration of the human element in the design, acquisition, and operation of complex technologies and weapons systems. Human Systems Integration emphasizes human considerations as a top priority in modern systems design in order to reduce life cycle costs and optimize system performance, and advocates a human-centered approach in the design, acquisition, testing and operation of human-machine interfaces.

Human Systems Integration at NPS is a multidisciplinary program composed of several basic areas: Human Factors Engineering, System Safety, Health Hazards, Habitability, Human Survivability, and Manpower, Personnel, and Training. Similarly, our multidisciplinary approach provides students with experiences in a variety of NPS academic departments and disciplines, including Human Factors, Operations Research, Modeling of Virtual Environments and Simulation (MOVES), Systems Engineering, and Business Administration. This approach ensures that each student is exposed to a wide range of basic theory and applied research, as well as allowing for diverse opportunities for research and thesis topics. In addition, our on-site Human Systems Integration Laboratory (HSIL) provides a broad range of research and testing opportunities.
INFORMATION SCIENCES PhD (474)

Curriculum 474
MASL# P176007 (PhD – 3 year program)

2017
Course Report: 19 Mar 17   18 Jun 17   10 Sep 17   26 Dec 17
Course Convene: 03 Apr 17   03 Jul 17   25 Sep 17   04 Jan 18
Course Complete 27 Mar 20   19 Jun 20   25 Sep 20   18 Dec 20

2018
Course Report: 18 Mar 18   17 Jun 18   10 Sep 17   26 Dec 17
Course Convene: 02 Apr 18   02 Jul 18   25 Sep 17   04 Jan 18
Course Complete 26 Mar 21   18 Jun 21   24 Sep 21   17 Dec 21

MASL# P176008 (PhD – 4 year program)

2017
Course Report: 19 Mar 17   18 Jun 17   10 Sep 17   26 Dec 17
Course Convene: 03 Apr 17   03 Jul 17   25 Sep 17   04 Jan 18
Course Complete 26 Mar 21   18 Jun 21   24 Sep 21   17 Dec 21

2018
Course Report: 18 Mar 18   17 Jun 18   10 Sep 17   26 Dec 17
Course Convene: 02 Apr 18   02 Jul 18   25 Sep 17   04 Jan 18
Course Complete 25 Mar 22   17 Jun 22   23 Sep 22   16 Dec 22

Course Length: 156/208 weeks

The Department of Information Sciences at the Naval Postgraduate School will award the Doctor of Philosophy in Information Sciences degree as a result of meritorious and scholarly achievement in a particular field of information sciences (IS). This program includes course work, scholarly socialization, written and oral examinations, research, and a written dissertation. A candidate must exhibit scholarly application to the entire course of study, achieve a high level of scientific advancement, and establish ability for original investigation leading to the advancement of fundamental knowledge.

IS broadly encompasses the design, implementation, use, promotion and evaluation of organizations, processes and systems associated with knowledge, information, data and communication. It includes areas of concentration in information systems, information technology, information warfare, information operations, and command and control. The study of IS is multidisciplinary, and no single theory or perspective dominates the field. In general, the field can be divided into technical and behavioral approaches. The technical approach to IS emphasizes mathematically based, normative models to study capabilities of systems and processes, in addition to emphasis on the technological artifacts that enable and support organizations, processes and systems associated with knowledge, information, data and communication. The behavioral approach to IS emphasizes behavioral problems associated with design, implementation, use, promotion and evaluation of organizations, processes and systems associated with knowledge, information, data and communication. A great part of IS research involves integrating these two, complementary approaches.

The Ph.D. in Information Sciences prepares scholars to conduct original research that contributes new knowledge in the domain of information systems, information technology, information warfare, information operations, or command and control.
control. With such ability to conduct original research and contribute new knowledge, the IS Ph.D. helps to prepare scholars also to teach effectively.

INFORMATION STRATEGY AND POLITICAL WARFARE (698)

Curriculum 698 (MS)
MASL# P179042

**Course Length: 78 weeks**

The goal of this curriculum is to educate military personnel and civilian officials of the United States and its Allies in the strategic and operational dimensions of information relative to the use of force as an instrument of statecraft.

The curriculum is designed for both the specialist who will be assigned to an information operations position and the generalist who will be assigned to an operations directorate. The curriculum includes a core of military art and operations, the human dimension of warfare emphasizing psychological warfare and military deception, analytical methods, and a technical sequence customized for each student that may include concentrations in cyber systems and operations, electronic warfare and computer network operations. Additional areas of concentration are available to meet specific student and organizational requirements. Finally, each student will write a thesis relevant to the field of information operations. The JIO curriculum is designed to develop the following competencies in its graduates:

- Analyze the global information environment and assess its impact on national security strategy.
- Analyze the role of information operations in national military strategy and maximize it contributions to national military power.
- Analyze information operations’ role in national information strategy and maximize its contributions to the non-military elements of national power.
- Evaluate the relationships, linkages and dependencies between intelligence and information operations.
- Analyze the contributions of the interagency community to information operations and vice versa.
- Analyze non-US approaches to, capabilities, and doctrines for information operations.
- Analyze the use of information operations to achieve desired effects across the spectrum of national security threats.
- Analyze how information operations are integrated to support the national military and security strategies and the interagency process.
- Analyze how information operations apply at the operational and strategic levels of war and how they support the operations of a networked force.
- Evaluate the national security technological environment as an enabler for current and future competitive advantage.
- Detect enemy cyber fires and plan defensive and offensive cyber operations
- Analyze the principles, capabilities and limitations of information operations across the range of military operations, to include pre and post-conflict operations.

This program is open to all branches of the military, federal employees, international military officers and government sponsored civilians.
INFORMATION WARFARE SYSTEMS ENGINEERING (International) (MS) (595)

Curriculum 595 (MS)
MASL# P179222

2017
Course Report: 18 Jun 17
Course Convene: 03 Jul 17
Course Complete: 14 Jun 19

2018
Course Report: 17 Jun 18
Course Convene: 02 Jul 18
Course Complete: 15 Jun 20

Course Length: 104 weeks
This course of study is appropriate for military officers who require a fundamental understanding of Information Warfare and Information Operations. Courses in the curriculum discuss the role of Information Warfare in modern warfare and the integral roles of EW, psychological operations, military deception, OPSEC, physical destruction, INFOSEC, and network attack. Mathematics, Science and Engineering fundamentals are provided to support the theoretical and experimental aspects of Information Warfare. System level understanding of Communication Systems, Electronic Warfare Systems, Radar Systems, Network Operations, Computer Network Security and Information Systems are emphasized. The System Engineering process is presented and applied in an Information Warfare team project.

JOINT COMMAND, CONTROL, COMMUNICATIONS, COMPUTERS, AND INTELLIGENCE (C4I) SYSTEMS (365)

Curriculum 365 (MS)
MASL# P179223

2017
Course Report: 18 Jun 17
Course Convene: 03 Jul 17
Course Complete: 29 Mar 19

2018
Course Report: 17 Jun 18
Course Convene: 02 Jul 18
Course Complete: 27 Mar 20

Course Length: 91 weeks
The Joint C4I curriculum is designed to provide military officers and civilian equivalents a comprehensive operational and technical understanding of the field of C4I systems as applied to joint, combined, and coalition military operations at the national and unified command levels. The program is designed with the following goals: enable individuals to develop an understanding of the role C4I systems play in the use of military power and the ability to interpret the impact of C4I on operating philosophy; provide adequate background knowledge in basic technology, human capabilities, and joint, combined, and coalition military operations and how these factors are exploited in current C4I systems; and provide the framework whereby students can perform requirement and planning studies of new C4I systems and contribute to crisis management.

JOINT OPERATIONAL LOGISTICS (361)

Curriculum 361 (MS) (Complimentary curriculum to Curriculum 360, Operations Analysis)
MASL# P179918

2017
Course Report: 19 Mar 17 10 Sep 17
Course Convene: 03 Apr 17 25 Sep 17
Course Complete: 29 Mar 19 27 Sep 19

2018
Course Report: 18 Mar 18 09 Sep 18
Course Convene: 02 Apr 18 24 Sep 18
Course Complete: 27 Mar 20 25 Sep 20
Course Length: 104 weeks
This program provides education in mathematics, probability and statistics, physical science, economics, logistics and computer science. These disciplines supply the theoretical background for planning and analysis of Naval and Joint Logistics. The course of study develops skills in computational capability, identifying relevant information, generating decision criteria and selecting alternatives. This education enhances performance in all duties throughout a military career, including operational billets, technical management assignments, and policy making positions.

AEROSPACE ENGINEERING (609)

Curriculum 609 (MS)
MASL# P179647

<table>
<thead>
<tr>
<th>Year</th>
<th>Course Report</th>
<th>Course Convene</th>
<th>Course Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>18 Jun 17</td>
<td>03 Jul 17</td>
<td>14 Jun 19</td>
</tr>
<tr>
<td></td>
<td>26 Dec 17</td>
<td>04 Jan 18</td>
<td>13 Dec 19</td>
</tr>
<tr>
<td>2018</td>
<td>17 Jun 18</td>
<td>02 Jul 18</td>
<td>19 Jun 20</td>
</tr>
<tr>
<td></td>
<td>26 Dec 18</td>
<td>03 Jan 19</td>
<td>18 Dec 20</td>
</tr>
</tbody>
</table>

Course Length: 104 weeks
Candidates with acceptable academic background may enter a program leading to the degree of Master of Science in Engineering Science (with major in Aerospace Engineering). Candidates who have not majored in aeronautical/aerospace engineering or closely related subject areas, or who have experienced significant lapses in continuity with previous academic work, will initially take undergraduate courses in aeronautical engineering and mathematics to prepare for their graduate program.

The Master of Science in Engineering Science (with major in Aerospace Engineering) degree requires:
- A minimum of 48 quarter-hours of graduate level work. The candidate must take all courses in an approved study program, which must satisfy the following requirements:
  - There must be a minimum of 32 quarter-hours of credits in 3000 and 4000 level courses, including a minimum of 12 quarter-hours at the 4000 level.
  - Of the 32 quarter-hours, at least 24 quarter-hours must be in courses offered by the MAE Department.
- A student must demonstrate knowledge of aerodynamics, aircraft stability and control, aircraft structures, aircraft and missile propulsion.
- The student must also demonstrate competence at the advanced level in one of the above disciplines of Aeronautical Engineering. This may be accomplished by completing at least eight quarter-hours of the 4000 level credits by courses in this department and a thesis in the same discipline area. The typical specialization track is in Aircraft Structures, Aerodynamics, Stability and Control, and Propulsion.
- An acceptable thesis for a minimum of 16 credits is also required. The student's thesis advisor, the Academic Associate, the Program Officer, and the Department Chairman must approve the study program and the Thesis Proposal.

METEOROLOGY (372)

Curriculum 372 (MS/PhD)
MASL# P174002 (MS)

<table>
<thead>
<tr>
<th>Year</th>
<th>Course Report</th>
<th>Course Convene</th>
<th>Course Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>19 Mar 17</td>
<td>03 Apr 17</td>
<td>14 Dec 18</td>
</tr>
<tr>
<td></td>
<td>10 Sep 17</td>
<td>25 Sep 17</td>
<td>14 Jun 19</td>
</tr>
<tr>
<td>2018</td>
<td>18 Mar 18</td>
<td>02 Apr 18</td>
<td>13 Dec 19</td>
</tr>
<tr>
<td></td>
<td>09 Sep 18</td>
<td>24 Sep 18</td>
<td>19 Jun 20</td>
</tr>
</tbody>
</table>
MASL# P179176 (PhD – 3 year program)

<table>
<thead>
<tr>
<th>Year</th>
<th>Course Report</th>
<th>Course Convene</th>
<th>Course Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>19 Mar 17, 10 Sep 17</td>
<td>03 Apr 17, 25 Sep 17</td>
<td>27 Mar 20, 25 Sep 20</td>
</tr>
<tr>
<td>2018</td>
<td>19 Mar 18, 10 Sep 18</td>
<td>02 Apr 18, 24 Sep 18</td>
<td>26 Mar 21, 24 Sep 21</td>
</tr>
</tbody>
</table>

Course Length: (MS) 91 weeks / (PhD) 156/208 weeks

This curriculum will provide qualified personnel with a sound understanding of the science of meteorology. The student will develop the technical expertise to assess and forecast the impact of atmospheric conditions on operations: 1) To understand the science of meteorological data and models. 2) To sample/measure, analyze and predict atmospheric conditions. 3) To operate and control data/information management systems. 4) To plan, conduct, interpret and present results of research activities. This 7 quarter course includes a refresher quarter. If a refresher quarter is not necessary then the course would only be 6 quarters beginning in the winter/summer.

METEOROLOGY AND OCEANOGRAPHY (METOC) (373)

Curriculum 373 (MS)

MASL# P174235 (MS)

<table>
<thead>
<tr>
<th>Year</th>
<th>Course Report</th>
<th>Course Convene</th>
<th>Course Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>18 Jun 17, 26 Dec 17</td>
<td>03 Jul 17, 04 Jan 18</td>
<td>14 Jun 19, 13 Dec 19</td>
</tr>
<tr>
<td>2018</td>
<td>17 Jun 18, 26 Dec 18</td>
<td>02 Jul 18, 03 Jan 19</td>
<td>19 Jun 20, 18 Dec 20</td>
</tr>
</tbody>
</table>

MASL# P179176 (PhD – 3 year program)

<table>
<thead>
<tr>
<th>Year</th>
<th>Course Report</th>
<th>Course Convene</th>
<th>Course Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>18 Jun 17, 26 Dec 17</td>
<td>03 Jul 17, 04 Jan 18</td>
<td>19 Jun 20, 18 Dec 20</td>
</tr>
<tr>
<td>2018</td>
<td>17 Jun 18, 26 Dec 18</td>
<td>02 Jul 18, 03 Jan 19</td>
<td>18 Jun 21, 17 Dec 21</td>
</tr>
</tbody>
</table>

MASL# P179543 (PhD – 4 year program)

<table>
<thead>
<tr>
<th>Year</th>
<th>Course Report</th>
<th>Course Convene</th>
<th>Course Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>18 Jun 17, 26 Dec 17</td>
<td>03 Jul 17, 04 Jan 18</td>
<td>18 Jun 21, 14 Dec 21</td>
</tr>
<tr>
<td>2018</td>
<td>17 Jun 18, 26 Dec 17</td>
<td>02 Jul 18, 03 Jan 19</td>
<td>17 Jun 22, 16 Dec 22</td>
</tr>
</tbody>
</table>

Course Length: (MS) 104 weeks / (PhD) 156/208 weeks

This curriculum in meteorology and oceanography involves approximately 120-quarter hours of classroom lectures, supplemented by an additional 35-quarter hours of laboratory exercises. This program is designed to provide the student...
with: 1) A thorough understanding of the principles governing the physical and dynamic properties of the oceans and atmosphere; 2) The ability to observe, assimilate, analyze, interpret, and predict oceanic and atmospheric parameters and conditions using field experimentation, direct and remote sensing observational techniques, statistical analyses and numerical models; 3) A thorough understanding of the effects of oceanic and atmospheric properties and conditions on weapon, sensor and platform performance while conducting and supporting Naval warfare with particular emphasis on ocean acoustics and electromagnetic/optical propagation; 4) An oceanographic or meteorological research experience germane to Naval warfare culminating in a thesis of professional quality; 5) A knowledge of Joint and Maritime Strategic Planning. This education will enhance performance in all duties throughout a career, including operational billets, technical management assignments and policy making positions. Students will develop graduate-level technical ability based upon scientific principles, acquire diverse professional knowledge and develop analytical ability for practical problem solving.

MODELING, VIRTUAL ENVIRONMENTS AND SIMULATION (MOVES) (399)

Curriculum 399 (MS/PhD)

MASL# P179067 (MS)

<table>
<thead>
<tr>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Report: 10 Sep 17</td>
<td>Course Report: 10 Sep 18</td>
</tr>
<tr>
<td>Course Convene: 25 Sep 17</td>
<td>Course Convene: 24 Sep 18</td>
</tr>
<tr>
<td>Course Complete: 14 Jun 19</td>
<td>Course Complete: 19 Jun 20</td>
</tr>
</tbody>
</table>

MASL# P179068 (PhD – 3 year program)

<table>
<thead>
<tr>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Report: 10 Sep 17</td>
<td>Course Report: 10 Sep 18</td>
</tr>
<tr>
<td>Course Convene: 25 Sep 17</td>
<td>Course Convene: 24 Sep 18</td>
</tr>
<tr>
<td>Course Complete: 25 Sep 20</td>
<td>Course Complete: 24 Sep 21</td>
</tr>
</tbody>
</table>

MASL# P179537 (PhD – 4 year program)

<table>
<thead>
<tr>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Report: 10 Sep 17</td>
<td>Course Report: 10 Sep 18</td>
</tr>
<tr>
<td>Course Convene: 25 Sep 17</td>
<td>Course Convene: 24 Sep 18</td>
</tr>
<tr>
<td>Course Complete: 24 Sep 21</td>
<td>Course Complete: 23 Sep 22</td>
</tr>
</tbody>
</table>

Course Length: (MS) 91 weeks / (PhD) 156/208 Weeks

The MOVES Curriculum was developed in response for an interdisciplinary graduate education program beyond that available through the Computer Science Curriculum's Computer Graphics and Visual Simulation track. The MOVES Curriculum of the Naval Postgraduate School provides the M.S. and Ph.D. student both fundamental and specialized courses in applied computer simulation technology and the application of quantitative analyses to human-computer interaction in simulation technology. The M.S. program is a two year, eight quarter program whose core covers the fundamentals of computer science, visual simulation and human-computer interaction. Specific topics include object-oriented programming, artificial intelligence, software methodology, computer communications and networks, computer graphics, virtual worlds and simulation systems, physically based modeling, probability, statistics, stochastic modeling, data analysis, and human performance evaluation.

Specialization by the M.S. student is accomplished by choosing a track and completing a sequence of courses providing depth in the selected area. There are two tracks that support the curriculum's research efforts, the Visual Simulation Track and the Human-Computer Interaction Track.
Once the MOVES Curriculum core courses have been taken and while the specialization courses are underway, the final step in the M.S. degree program is the completion of a written thesis. This thesis is usually conducted on a research problem specified by a thesis advisor attached to a MOVES-associated laboratory. Current laboratories working with the MOVES Curriculum are the NPSNET Research Group, a leading developer of networked, large-scale virtual environments, and the Information Infrastructure Research Group (IIRG), whose focus is on advanced network issues such as asynchronous transfer mode (ATM), multicast backbone (MBONE) and internetworking regional research institutions.

**NAVAL / MECHANICAL ENGINEERING (570)**

Curriculum 570 (MS/PhD)
MASL# P177715 (MS)

<table>
<thead>
<tr>
<th>Year</th>
<th>Course Report</th>
<th>Course Convene</th>
<th>Course Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>18 Jun 17</td>
<td>03 Jul 17</td>
<td>14 Jun 19</td>
</tr>
<tr>
<td></td>
<td>26 Dec 17</td>
<td>04 Jan 18</td>
<td>13 Dec 19</td>
</tr>
<tr>
<td>2018</td>
<td>17 Jun 18</td>
<td>02 Jul 18</td>
<td>19 Jun 20</td>
</tr>
<tr>
<td></td>
<td>26 Dec 18</td>
<td>03 Jan 19</td>
<td>18 Dec 20</td>
</tr>
</tbody>
</table>

MASL# P179108 (PhD – 3 year program)

<table>
<thead>
<tr>
<th>Year</th>
<th>Course Report</th>
<th>Course Convene</th>
<th>Course Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>25 Sep 17</td>
<td>10 Sep 17</td>
<td>25 Sep 20</td>
</tr>
<tr>
<td></td>
<td>24 Sep 18</td>
<td>09 Sep 18</td>
<td>24 Sep 21</td>
</tr>
</tbody>
</table>

MASL# P179538 (PhD – 4 year program)

<table>
<thead>
<tr>
<th>Year</th>
<th>Course Report</th>
<th>Course Convene</th>
<th>Course Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>24 Sep 21</td>
<td>10 Sep 17</td>
<td>23 Sep 22</td>
</tr>
<tr>
<td></td>
<td>24 Sep 18</td>
<td>09 Sep 18</td>
<td>24 Sep 22</td>
</tr>
</tbody>
</table>

Course Length: (MS) 104 weeks / (PhD) 156/208 weeks

The objective of this program is to provide graduate education, primarily in the field of Naval/Mechanical Engineering, to produce graduates with the technical competence to operate and maintain modern warships and naval systems. It establishes a broad background of basic engineering knowledge leading to advanced studies in heat transfer, fluid mechanics, control systems, solid mechanics and vibrations and material science. The graduate will be able to participate in technical aspects of naval systems acquisition for technological advances in naval ships, submarines, autonomous vehicles, and related weapon systems. Through emphasis on the design aspect within the program, the graduate will be well prepared to apply these advances in technology to the warships and submarines of the future. An original research project resulting in a finished thesis is an integral part of the curriculum.

**TACTICAL AND STRATEGIC MISSILE TECHNOLOGY AND DESIGN**

The Department of Mechanical and Aerospace Engineering offers a Missile Systems Engineering Track within the framework of a Master’s Degree in Mechanical Engineering. The program allows students to take courses related to tactical and/or strategic missile systems and can be completed in four to six quarters, depending on academic preparedness of the student. Additional course electives can be taken to enhance specialty areas, along with thesis research related to tactical or strategic systems, or a wide range of other useful military technologies. The missile track course sequence is taken in conjunction with courses required for the standard Masters of Science degree. The courses can be taken over the course of a year and cover the critical technology areas related to tactical and strategic missile analysis, design, fabrication, and operation. The primary courses of the track are: Missile Aerodynamics (October), Missile Guidance and Control (March), Advanced Missile Propulsion (January) and Tactical Missile Design (July).
AUTONOMOUS SYSTEMS AND MILITARY ROBOTICS TECHNOLOGY AND DESIGN

The Department of Mechanical and Aerospace Engineering offers an Autonomous Systems Engineering Track within the framework of a Master’s Degree in Mechanical Engineering. The program allows students to take courses related to the Military use autonomous systems and can be completed in six to eight quarters, depending on academic preparedness of the student. Additional course electives can be taken to enhance specialty areas, along with thesis research related to autonomous systems, robotics or a wide range of other useful military technologies. The sequence of special courses is taken in conjunction with courses required for the standard Masters of Science degree. The courses can be taken over the course of a year and cover the critical technology areas related to tactical and strategic missile analysis, design, fabrication, and operation. The primary courses of the track are: Introduction to the Military Use of Autonomous Systems, Control of Autonomous Systems, Navigation and Control of Single and Multiple Vehicles, and Autonomous Systems Lab.

ENERGY SPECIALTY

The objective of this program is to provide graduate education, primarily in the field of Naval/Mechanical Engineering with a focus on Energy, including production, storage, and use. This program is designed to produce graduates with the technical competence to operate and maintain modern warships and naval systems. It establishes a broad background of basic engineering knowledge leading to advanced studies in heat transfer, fluid mechanics, control systems, solid mechanics and vibrations, material science, energy production, storage and usage. The graduate will be able to participate in technical aspects of naval systems acquisition for technological advances in naval ships and systems, particularly as they apply to energy. Through emphasis on the design aspect within the program, the graduate will be well prepared to apply these advances in technology to the warships of the future. An original research project focusing on either: ‘Energy, Power and Propulsion Systems’ or ‘Energy Materials’ resulting in a satisfactory thesis, is an integral part of the curriculum.

NETWORK OPERATIONS AND TECHNOLOGY (NWOT) (386)

<table>
<thead>
<tr>
<th>Curriculum 386</th>
</tr>
</thead>
<tbody>
<tr>
<td>MASL# P179617</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Report:</td>
<td>10 Sep 17</td>
</tr>
<tr>
<td>Course Convene:</td>
<td>25 Sep 17</td>
</tr>
<tr>
<td>Course Complete:</td>
<td>29 Mar 19</td>
</tr>
</tbody>
</table>

Course Length: 78 weeks

The NWOT program is designed to provide the broad base of knowledge needed to assist in fighting and winning America’s wars in today’s networked environment. The curriculum consists of a professional practice core of courses and specialization tracks of study in Information Domain Operations and Information Systems Management. The academic core consists of web services, network operations, enterprise strategies and policy, and managing process change. The specialization tracks are designed to provide students and opportunity to explore specific areas of interest to the Navy.

OCEANOGRAPHY (440)

<table>
<thead>
<tr>
<th>Curriculum 440 (MS/PhD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MASL# P174011 (MS)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Report:</td>
<td>19 Mar 17</td>
</tr>
<tr>
<td>Course Convene:</td>
<td>03 Apr 17</td>
</tr>
<tr>
<td>Course Complete:</td>
<td>29 Mar 19</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Report:</td>
<td>10 Sep 17</td>
</tr>
<tr>
<td>Course Convene:</td>
<td>25 Sep 17</td>
</tr>
<tr>
<td>Course Complete:</td>
<td>20 Sep 19</td>
</tr>
</tbody>
</table>
### OPERATIONS ANALYSIS (360)

**Curriculum 360 (MS/PhD)**

**MASL# P177714 (MS)**

<table>
<thead>
<tr>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Report:</td>
<td>19 Mar 17</td>
</tr>
<tr>
<td>Course Report:</td>
<td>10 Sep 17</td>
</tr>
<tr>
<td>Course Convene:</td>
<td>03 Apr 17</td>
</tr>
<tr>
<td>Course Convene:</td>
<td>25 Sep 17</td>
</tr>
<tr>
<td>Course Complete:</td>
<td>14 Dec 18</td>
</tr>
<tr>
<td>Course Complete:</td>
<td>14 Jun 19</td>
</tr>
<tr>
<td>Course Complete:</td>
<td>18 Mar 18</td>
</tr>
<tr>
<td>Course Complete:</td>
<td>09 Sep 18</td>
</tr>
<tr>
<td>Course Complete:</td>
<td>02 Apr 18</td>
</tr>
<tr>
<td>Course Complete:</td>
<td>24 Sep 18</td>
</tr>
<tr>
<td>Course Complete:</td>
<td>13 Dec 19</td>
</tr>
<tr>
<td>Course Complete:</td>
<td>19 Jun 20</td>
</tr>
</tbody>
</table>

**Course Length: (MS) 104 weeks / (PhD) 156/208 weeks**

The Oceanography Curriculum provides students with a sound understanding of the science of oceanography. The student develops the technical expertise to provide and use oceanographic and acoustical data and models in support of all aspects of at-sea operations. The graduate will be able to: 1) Interpret and predict oceanic and air-ocean interface conditions. 2) Operate modern oceanographic data management, archival and communications systems. 3) Plan, conduct, interpret and present results of research activities. This education further enhances performance in operational billets, technical management assignments and policy making positions. Students will develop a sound, graduate-level technical ability based on scientific principles.

### Operations Analysis (360)
processes, and the optimal deployment of given resources to achieve required missions. The OA curriculum was successfully founded by NPS in 1951 in order to retain, develop, and promulgate the methods that were used so successfully in World War II. Mathematics, probabilities, statistics, human factors, and optimization supply the theoretical background for analyzing alternative choices in tactical and strategic warfare, and in planning, budgeting, and procurement of systems and forces. The student learns the computational methods and develops skills to identify relevant information, formulate decision criteria and select alternatives. This education enhances performance in all duties throughout a military career including operational billets, technical management assignments and policy making positions.

**REGIONAL SECURITY STUDIES (EAST & SOUTHEAST ASIA) CERTIFICATE (247)**

**Curriculum 247**
MASL# P179648

**2017**

<table>
<thead>
<tr>
<th>Course Report:</th>
<th>19 Mar 17</th>
<th>18 Jun 17</th>
<th>10 Sep 17</th>
<th>26 Dec 17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Convene:</td>
<td>03 Apr 17</td>
<td>03 Jul 17</td>
<td>25 Sep 17</td>
<td>04 Jan 18</td>
</tr>
<tr>
<td>Course Complete:</td>
<td>16 Jun 17</td>
<td>22 Sep 17</td>
<td>15 Dec 17</td>
<td>30 Mar 18</td>
</tr>
</tbody>
</table>

**2018**

<table>
<thead>
<tr>
<th>Course Report:</th>
<th>18 Mar 18</th>
<th>17 Jun 18</th>
<th>09 Sep 18</th>
<th>27 Dec 18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Convene:</td>
<td>02 Apr 18</td>
<td>02 Jul 18</td>
<td>24 Sep 18</td>
<td>03 Jan 19</td>
</tr>
<tr>
<td>Course Complete:</td>
<td>15 Jun 18</td>
<td>21 Sep 18</td>
<td>14 Dec 18</td>
<td>29 Mar 19</td>
</tr>
</tbody>
</table>

**Course Length: 13 weeks**

This program is designed to provide region-specific knowledge for select regionally-aligned force officers who will benefit from serious engagement with current academic and policy work on their region of specialization. The Certificate requires successful completion of a minimum of three graduate courses focusing on the region (12 credit hours), of which at least one course (4 credit hours) must be at the 4000-level. Each student’s required course work is developed individually under the direction of the Academic Associate, based on the relevant regional courses available during the quarter(s) when the student is in residence. Students may begin their course of study in any academic quarter.

International students whose native language, or language of prior instruction, was other than English, are required to have obtained a minimum total score of 90 on the internet-based Test of English as a Foreign Language (TOEFL), or a score of 560 on the written test.

Course offerings in NSA vary from year to year. The following illustrate what a (minimum) acceptable combination of courses might look like. Many other combinations are possible.

**Example 1 (East Asia [general regional] concentration)**
NS3600, History of Modern East Asia
NS3662, Government and Security in Japan
NS4645, Asian Security: Theory and Practice

**Example 2 (Southeast Asian concentration)**
NS3601, History and Cultures of Southeast Asia
NS3621, International Relations of Southeast Asia
NS4641, Political and Ethnic Violence in Southeast Asia
Example 3 (East Asia [China] concentration)
NS3661, Government and Security in China
NS4642, Chinese Foreign Policy
NS4024, Political Economy of China

REGIONAL SECURITY STUDIES (EUROPE AND EURASIA) CERTIFICATE (249)

Curriculum 249
MASL# P179667

2017
Course Report: 19 Mar 17 18 Jun 17 10 Sep 17 26 Dec 17
Course Convene: 03 Apr 17 03 Jul 17 25 Sep 17 04 Jan 18
Course Complete: 16 Jun 17 22 Sep 17 15 Dec 17 30 Mar 18

2018
Course Report: 18 Mar 18 17 Jun 18 09 Sep 18 27 Dec 18
Course Convene: 02 Apr 18 02 Jul 18 24 Sep 18 03 Jan 19
Course Complete: 15 Jun 18 21 Sep 18 14 Dec 18 29 Mar 19

Course Length: 13 weeks
This program is designed to provide region-specific knowledge for select regionally-aligned force officers who will benefit from serious engagement with current academic and policy work on their region of specialization. The Certificate requires successful completion of a minimum of three graduate courses focusing on the region (12 credit hours), of which at least one course (4 credit hours) must be at the 4000-level. Each student’s required course work is developed individually under the direction of the Academic Associate, based on the relevant regional courses available during the quarter(s) when the student is in residence. Students may begin their course of study in any academic quarter.

Course offerings in NSA vary from year to year. The following illustrate what a (minimum) acceptable combination of courses might look like. Many other combinations are possible.

Example 1 (Europe concentration)
NS3700, History of Modern Europe
NS3720, European Security Institutions
NS4021, Europe and the United States

Example 2 (Eurasia concentration)
NS3466, Central Asian History
NS3401, Contemporary Politics in Russia
NS4410, Seminar on Security Issues in Russia, Eastern Europe, and Central Asia

Example 3 ([Western] Europe concentration)
NS3710, Introduction to European Politics
NS4037, NATO
NS4022, Soldiers and Politics in the Euro-Atlantic Region
REGIONAL SECURITY STUDIES (MIDDLE EAST, SOUTH ASIA, AND AFRICA) CERTIFICATE (246)

Curriculum 246
MASL# P179646

2017
Course Report: 19 Mar 17  18 Jun 17  10 Sep 17  26 Dec 17
Course Convene: 03 Apr 17  03 Jul 17  25 Sep 17  04 Jan 18
Course Complete: 16 Jun 17  22 Sep 17  15 Dec 17  30 Mar 18

2018
Course Report: 18 Mar 18  17 Jun 18  09 Sep 18  27 Dec 18
Course Convene: 02 Apr 18  02 Jul 18  24 Sep 18  03 Jan 19
Course Complete: 15 Jun 18  21 Sep 18  14 Dec 18  29 Mar 19

Course Length: 13 weeks
This program is designed to provide region-specific knowledge for select regionally-aligned force officers who will benefit from serious engagement with current academic and policy work on their region of specialization. The Certificate requires successful completion of a minimum of three graduate courses focusing on the region (12 credit hours), of which at least one course (4 credit hours) must be at the 4000-level. Each student’s required course work is developed individually under the direction of the Academic Associate, based on the relevant regional courses available during the quarter(s) when the student is in residence. Students may begin their course of study in any academic quarter.

Course offerings in NSA vary from year to year. The following illustrate what a (minimum) acceptable combination of courses might look like. Many other combinations are possible.

Example 1 (Middle East concentration)
NS3320, United States Foreign Policy in the Middle East
NS3330, Comparative Politics of the Middle East
NS4315, Security and Politics in Iran
Example 2 (South Asian concentration)
NS3668, Politics and Security in South Asia
NS4661, Contemporary Afghan Politics
NS4664, Religious Activism in South Asian Politics

Example 3 (Sub-Saharan Africa concentration)
NS3301, African History and Cultures
NS3311, Government and Politics in Sub-Saharan Africa
NS4328, Government and Security in the Horn of Africa

REGIONAL SECURITY STUDIES (WESTERN HEMISPHERE) CERTIFICATE (248)

Curriculum 248
MASL# P179649

2017
Course Report: 19 Mar 17  18 Jun 17  10 Sep 17  26 Dec 17
Course Convene: 03 Apr 17  03 Jul 17  25 Sep 17  04 Jan 18
Course Complete: 16 Jun 17  22 Sep 17  15 Dec 17  30 Mar 18
**Course Length: 13 weeks**

This program is designed to provide region-specific knowledge for select regionally-aligned force officers who will benefit from serious engagement with current academic and policy work on their region of specialization. The Certificate requires successful completion of a minimum of three graduate courses focusing on the region (12 credit hours), of which at least one course (4 credit hours) must be at the 4000-level. Each student’s required course work is developed individually under the direction of the Academic Associate, based on the relevant regional courses available during the quarter(s) when the student is in residence. Students may begin their course of study in any academic quarter.

Course offerings in NSA vary from year to year. The following illustrate what a (minimum) acceptable combination of courses might look like. Many other combinations are possible.

Example 1
NS3501, History and Cultures of Latin America  
NS3510, Government and Politics in Latin America  
NS4560, Seminar on Latin American Security Issues

Example 2
NS3520, Latin American International Relations  
NS3560, Political and Social Change in the Andes  
NS4540, The Political Economy of Latin America

Example 3
NS3501, History and Cultures of Latin America  
NS4501, Politics, Film, and Fiction in Latin America  
NS4059, Special Topics: Latin America.

**SPACE SYSTEMS OPERATIONS (International) (364)**

Curriculum 364 (MS)  
MASL# P179910

**2018**
Course Report: 18 Mar 18  
Course Convene: 02 Apr 18  
Course Complete: 15 Jun 18

Course Report: 17 Jun 18  
Course Convene: 02 Jul 18  
Course Complete: 21 Sep 18

Course Report: 09 Sep 18  
Course Convene: 24 Sep 18  
Course Complete: 14 Dec 18

Course Report: 27 Dec 18  
Course Convene: 03 Jan 19  
Course Complete: 29 Mar 19

**Course Length: 78 weeks**

A course of study modeled after Curriculum 366, Space Systems Operations, is available for international students. The Space Systems Operations curriculum is designed to provide officers with an appreciation for military opportunities and applications in space, comprehensive, practical as well as theoretical knowledge of the operation, tasking and employment of space surveillance, communications, navigation and atmospheric/oceanographic/environmental sensing systems and knowledge of payload design and integration.
SPECIAL OPERATIONS / IRREGULAR WARFARE (699)

Curriculum 699 (MS)
MASL# P173200

Course Length: 78 weeks

The Special Operations Curriculum is designed to provide a focused course of study of the conflict spectrum below general conventional war. Graduates of this curriculum will possess a close knowledge of the broad range of factors involved in the planning and conduct of these forms of conflict and a detailed understanding of the role of special operations and related forces in foreign and defense policy. The curriculum examines the sources and dynamics of inter-state and intra-state conflict, the challenge these forms of conflict have posed and are likely to increasingly pose for security planning, the doctrinal and institutional evolution of the special operations community, the recent history of political violence and “small wars” in Latin America, Asia, and the Middle East, the history of irregular warfare, and contemporary perspectives on low intensity conflict resolution. These curriculum specific requirements are supported by a larger program of study which provides the graduate with a broad background in the areas of international relations, comparative strategy, the technological revolution in military affairs, and advanced analytical methods.

SYSTEMS ENGINEERING (580)

Curriculum 580 (MS)
MASL# P174270

Course Length: 91 weeks

Systems Engineering at NPS provides a broad education in systems engineering methods and tools, and depth in a particular domain of application. Several domain tracks are offered, including combat systems engineering, ship systems engineering, and network-centric systems engineering. Other tracks are added, based on sponsor and student demand. The tracks consist of eight or more courses to gain depth in the domain area. These tracks complement the standard set of systems engineering courses. The curriculum is interdisciplinary and draws on courses from across campus.

Graduates will:

Demonstrate the ability to identify, formulate, and solve operational, technical, and engineering problems in Systems Engineering and related disciplines using the techniques, skills, and tools of modern practice, including modeling and simulation. These problems may include issues of research, design, development, procurement, operation, maintenance or disposal of systems and processes for military applications.

Demonstrate proficiency in the systems engineering process, including defining requirements, conducting functional analysis, designing and architecting a system, analyzing it against requirements, allocation of requirements to sub-
systems, conducting trade-off studies, determining the cost of the system, integrating human factors into the
system, designing logistical supportability, and planning for its testing and evaluation.

Demonstrate proficiency in core skills of systems analysis, to include deterministic and stochastic modeling of
systems, optimization, decision analysis, risk analysis, economic models, and lifecycle supportability analysis. This
includes familiarity with combat simulations and combat modeling.

Demonstrate the ability to work as a team member or leader in a large systems engineering project, and to provide
leadership in the systems engineering management process. The graduate must be able to interact with personnel
from other services, industry, laboratories and academic institutions. Students come from the uniformed services,
civilian members of government, and from foreign military services. US Navy Engineering Duty Officers constitute a
substantial portion of the students.

SYSTEMS ENGINEERING PhD (581)

Curriculum 581
MASL# P170025 (PhD – 3 year program)

2017
Course Report:  19 Mar 17  18 Jun 17  10 Sep 17  26 Dec 17
Course Convene:  03 Apr 17  03 Jul 17  25 Sep 17  04 Jan 18
Course Complete  27 Mar 20  19 Jun 20  25 Sep 20  18 Dec 20

2018
Course Report:  18 Mar 18  17 Jun 18  10 Sep 17  26 Dec 17
Course Convene:  02 Apr 18  02 Jul 18  25 Sep 17  26 Dec 17
Course Complete  26 Mar 21  18 Jun 21  24 Sep 21  17 Dec 21

MASL# P170035 (PhD – 4 year program)

2017
Course Report:  19 Mar 17  18 Jun 17  10 Sep 17  26 Dec 17
Course Convene:  03 Apr 17  03 Jul 17  25 Sep 17  04 Jan 18
Course Complete  26 Mar 21  18 Jun 21  24 Sep 21  17 Dec 21

2018
Course Report:  18 Mar 18  17 Jun 18  10 Sep 17  26 Dec 17
Course Convene:  02 Apr 18  02 Jul 18  25 Sep 17  26 Dec 17
Course Complete  25 Mar 22  17 Jun 22  23 Sep 22  16 Dec 22

Course Length: 156/208 weeks
The Department of Systems Engineering offers a Doctor of Philosophy (Ph.D.) degree in Systems Engineering. Students
take graduate level courses in systems engineering (as needed to pass the oral and written qualifying examinations),
advanced graduate courses in systems engineering and an application domain, and perform research that leads to a
dissertation involving some aspect of systems engineering. Research topics may be selected from a broad variety of
studies of the systems engineering process, applications of systems engineering to solving complex problems, systems
level modeling and simulation, and systems suitability assessment. Ideally, applicants should possess an M.S. degree in
Systems Engineering. Applicants with only a B. S. degree or an M.S. degree in another discipline will be required to take
a number of systems engineering courses (equivalent to the coursework portion of an MSSE degree program) to pass
the qualifying examinations. Unless an M.S. thesis and any other ABET accreditation requirements are also satisfied, an
M.S. in Systems Engineering degree will not be awarded for this preparatory work.
SYSTEMS ENGINEERING AND ANALYSIS (308)

Curriculum 308 (MS)
MAS# P174015

2017
Course Report: 18 Jun 17 26 Dec 17
Course Convene: 03 Jul 17 04 Jan 18
Course Complete: 14 Jun 19 13 Dec 19

2018
Course Report: 17 Jun 18 26 Dec 18
Course Convene: 02 Jul 18 03 Jan 19
Course Complete: 19 Jun 20 18 Dec 20

Course Length: 104 weeks
This curriculum is designed for combat officers, and will enable the student to exploit emerging technologies to achieve war-fighting advantages. The students will blend their operational experience with a thorough technical education to expeditiously integrate new technological capabilities into operational applications. The officer will be able to evolve current tactics and doctrine to expeditiously leverage imminent technological advances. This war-fighting oriented program provides a solid understanding of the principles and applications of systems engineering, and employs these principles to gain insight into operational problems. This program includes a core of courses, in fields of modeling, simulation, weapons, and sensors that will enhance understanding and analysis of selected case studies and weapons systems. The program is designed as a highly integrated graduate education experience. There will be lectures, team projects, and individual research as well as seminars from visiting experts. Each arriving officer is evaluated for existing knowledge, skills and competencies and an individual course of study developed.

TEMASEK DEFENSE SYSTEMS INSTITUTE (TDSI) PROGRAM (MS)

MAS# P179039
(NPS portion)

2017
Course Report: 10 Sep 17
Course Convene: 25 Sep 17
Course Complete: 21 Sep 18

2018
Course Report: 09 Sep 18
Course Convene: 24 Sep 18
Course Complete: 27 Sep 19

Course Length: (NPS portion) 52 weeks (4 quarters)
This joint Naval Postgraduate School (NPS) and National University of Singapore (NUS) program provides qualified personnel with an advanced understanding of the dynamic complexity of military warfare for exploiting emerging technologies to achieve war-fighting advantages. The joint curriculum provides a platform for the education and the integration of operational staff and defense technologists to plan, design, develop, create, operate and sustain Integrated Military Forces of the 21st Century.

The first two quarters (six months) of the joint curriculum are conducted at NUS by faculty from NUS and NPS, and provide a firm grounding in key technical and project management skills. The third to sixth quarters (one year) are conducted at NPS, where the students will enter into designated specialization tracks such as Communication Systems, Sensor Systems, Operations Research, Information Assurance and Guided Weapons Systems. The students blend their operational experience with a thorough technical education to expeditiously integrate new technological capabilities into operational applications. Upon successful completion of the coursework, an integrated project, and thesis research, the student will be awarded two separate degrees. From NPS students receive an M/S in the appropriate technical field,
such as Electrical Engineering, Computer Science, Mechanical Engineering, and Operations Research. NUS awards an MS in Defense Technical Systems.

TOTAL SHIP SYSTEMS ENGINEERING (TSSE) (MS)

MASL# P177715 – Naval/Mechanical Engineering
MASL# P177712 – Electronic Systems Engineering
MASL# P179906 – Combat Systems

**Course Length: 104 weeks**

Engineering program through the standard 533/570/590 curricula; Naval/Mechanical Engineering, Electrical Engineering, and Combat Systems respectively.

Start – Entry Dates – Total Ship Systems Engineering will generally fit as part of an eight-quarter program, with TSSE electives commencing in October. The ease of accommodating TSSE in a student’s program is influenced by the student’s NPS entry quarter and undergraduate background and performance. Individuals interested in the program should explore the necessary course sequencing with the program officer as early as possible.

The objective of this program is to provide a broad-based, design oriented education focusing on the warship as total engineering system including hull, mechanical, electrical and combat systems. The program is for selected Naval/Mechanical Engineering, Electrical Engineering, and Combat Systems Sciences and Technology students and is structured to lead to the MSME, MSEE, or MS in Physics.

UNDERSEA WARFARE (INTERNATIONAL) (526)

Curriculum 526 (MS)
MASL# P179911

**Course Length: 104 weeks**

The Undersea Warfare Curriculum educates officers in the engineering fundamentals, physical principles and analytical concepts that govern operational employment of undersea warfare (USW) sensors and weapons. This interdisciplinary program divides naturally into four major academic areas, allowing the student to specialize in the area of choice and to complete a Master of Science in Engineering Acoustics (with emphasis on underwater acoustics and weapons effects), Physical Oceanography (with emphasis on environmental factors affecting acoustic surveillance), Electrical Engineering (with emphasis on signal processing), Operations Research (with emphasis on tactical applications and decision analysis), or in other disciplines depending on the student's academic background.
The course describes the use of improvised explosive devices in contemporary warfare with emphasis on how to organize to counter an IED campaign. The course begins with descriptions of various IED devices, why and how they are used, methods and technology to counter IEDs, the IED organization, how to organize to counter an IED campaign, and how to target organizations that control IED violence. A framework is developed to understand and address the many interlocking aspects of countering an IED campaign including: insurgency and civil war; recruiting, training, and financing of IED makers; data collection; geo-spatial analysis; crime forensics; intelligence; detainee interrogations; reconstruction; political and economic development; society and culture; information operations; training local police, security forces, and military personnel; reconciliation; and negotiations. The class will be taught in the accelerated mode with 4 hours per week for the first six weeks of the quarter. There will be extensive reading, weekly homework, and a short paper. Course is graded on Pass/Fail basis only. The class is open to students from all NPS curricula.

PREREQUISITES: None
NON-DEGREE OPTIONS

1. NPS has also developed a series of non-degree program MASLs (up-to-one year) to accommodate requests for eligible students who are not available for the full degree programs. Students will be integrated into regular master’s curriculum classes. Therefore standard admissions eligibility and TOEFL requirements apply. Course options will depend on whether prerequisite courses are required and when during the year that they are offered. Check the online edition of the NPS catalog for specific course offerings and descriptions:
   http://www.nps.edu/admissions/catalog

2. Example offerings include:
   a. Security Studies
      NS 3000-War in the Modern World
      NS 3023-Introduction to Comparative Politics
      NS 3024-Introduction to International Relations
   b. Combating Terrorism-Policy and Strategy
      NS 3801-International Terrorism
      NS 3802-Counterterrorism Policy in Comparative Perspective
      NS 4231-Seminar on Terrorism Financing
   c. Defense Systems Management
      GB 3010-Managing For Organizational Effectiveness
      GB 3050-Financial Reporting and Analysis
      GB 3070-Economics of the Global Defense Environment
   d. Financial Management
      GB 3040-Managerial Statistics
      GB 3051-Cost Management
      GB 4052-Managerial Finance
   e. Joint Command, Control, Communications, Computers, and Intelligence (C4I) Systems
      CC3000-Introduction to Command and Control
      CC3102-Introduction to Combat Modeling and Analysis for C4I
      CC4101-Systems Engineering for Joint C4I
   f. Computer Science, Information Security and Assurance Track
      CS 3600-Information Assurance: Introduction to Computer Security
      CS 3690-Network Security
      CS 3675-Network Vulnerability Assessment

3. Research can be conducted at NPS in conjunction with independent post doctoral study or in conjunction with other university degree programs. Acceptance will depend on identifying suitable NPS faculty with expertise in the identified research area.

NON-DEGREE MASLs:

- P179914 – Research only - from one week to three years
- P179268 – One quarter - one course
- P179267 – One quarter - two courses
- P179266 – One quarter - three courses
- P179265 – One quarter - four courses
- P179269 – Two quarters - eight courses
- P179270 – Three quarters - twelve courses
- P179271 – Four quarters - sixteen courses
DISTANCE LEARNING COURSE OFFERINGS

The following courses are available through Distance Learning (DL). Normal academic requirements, admissions procedures, and funding requirements apply. At the current time individual courses within degree or certificate programs are not available as stand-alone options. Pricing will depend on the length of the program and number of courses taken. OCONUS MASL numbers are used when the course is taken outside of the geographical United States. CONUS MASL numbers are used when the program is taken in the continental United States, but not necessarily in Monterey at the Naval Postgraduate School.

ANTI-SUBMARINE WARFARE CERTIFICATE PROGRAM (ASW) (274)

Curriculum 274
MASL# P170214 (CONUS); P471214 (OCONUS)

Course Start: March only Course Length: 52 weeks with a quarter break in fall to provide time to review calculus and/or probability if desired

The curriculum for the Anti-Submarine Warfare (ASW) Certificate Program supports the needs of the Navy in ASW, and complements existing warfare ASW training and qualification.

The ASW Certificate consists of a sequence of four highly technical courses designed to provide our civilian and active-duty workforce with a learning experience which extends their general undergraduate education to include the essential concepts, equations, and skill sets needed to understand, design, and use ASW systems. The web-based courses are paced week-to-week by the instructors, but students have the flexibility to do coursework at times of their choosing during each week. The course is four quarters with a one quarter break in the fall to provide time to review calculus and/or probability if desired.

Quotas: Limited to 25 students per year

Course Pre-requisites
Baccalaureate Degree (BA or BS)
Written Command Endorsement
A working knowledge of single-variable calculus (MA1113)
Probability and statistics

POC: Daphne Kapolka, Senior Lecturer
Academic Associate
1 University Circle, Room Sp-200A
Naval Postgraduate School
Monterey, CA 93943
Email: dkapolka@nps.edu
Phone: (831) 656-1825
AVIATION SYSTEMS ENGINEERING PROGRAM (312)

Curriculum 312  
MASL# P471006 (OCONUS)

Course Start: March and September

Course Length: 104 weeks
The objective of this program is to provide graduates of the U.S. Naval Test Pilot School (USNTPS) the opportunity to obtain a Master of Science in Systems Engineering (provided they hold an ABET undergraduate engineering degree, or can establish equivalency) or Master of Science in Engineering Systems (all others) with an Aviation Systems specialization. The program is delivered by distance learning and builds upon the USNTPS academic and flight test instruction, with the student's USNTPS final flight test project and report (DTII) serving in lieu of a thesis, and will provide the advanced systems engineering knowledge, tools and skills necessary for the graduate to be successful as an aviation systems engineer in an acquisition program office or aviation engineering and support activity.

Course Pre-requisites
Baccalaureate Degree in Engineering or a related science or technology field  
GPA of 2.2 or better  
Successful completion of a calculus course  
Graduate of the U.S. Naval Test Pilot School (USNTPS)

POC: Wally Owen, Senior Lecturer  
Program Officer  
1 University Circle, Room Bu-201J  
Naval Postgraduate School  
Monterey, CA 93943  
Email: wowen@nps.edu  
Phone: (831) 402-6086; (636) 935-2982

CYBER SECURITY DEFENSE CERTIFICATE (258)

Curriculum 258 (DL)  
MASL# P471027 (DL) (OCONUS)

Course Report Date: Any Quarter

Course Length: 26 / 52 weeks
Using the foundation established through the Cyber Security Fundamentals certificate, students enrolled in Cyber Security Defense graduate certificate, will obtain a detailed understanding of and ability to function in real operational situations involving cyber security. They will gain the technical depth required to actively prepare for and respond to attacks. Students will learn to analyze network traffic to extract the observable characteristics of networks and network devices, thus providing a basis for defensive strategies. They will learn to build tools and how to configure systems and networks to permit systems to foster resiliency and continuity of operations, perhaps with reduced capacity, through attacks. Students will learn how to construct systems and tools to mitigate the impact of malicious software. Students will learn forensic techniques to retrieve and analyze stored information that may be corrupted or hidden. Considerable programming and hands-on work with systems and networks will be required. Entire courses, or units within them, may be taught at the classified level, thus facilitating classroom discussions on emerging challenges and capabilities. Students entering this program are expected to have a strong foundation in cyber security and networking. In addition, entering students will be expected to understand and use the languages and techniques of operating system and network
component development: the C programming language, assembly, shell scripting, use of linkers, loaders, and debuggers.

The total number of NPS graduate credits obtained for the certificate is 12, where laboratory credits are counted as half. Courses may be taken two at a time or as a linear sequence of individual offerings. This certificate program can be applied toward a master’s degree program, e.g. to Curriculum 368.

Required courses:
CS4558 Network Traffic Analysis
CS4677 Computer Forensics
CS4684 Cyber Security Incident Response and Recovery

POC: Cynthia Irvine, Ph.D.
Email: irvine@nps.edu
Phone: (831) 656-2461
Glasgow East Hall, Room 211
Naval Postgraduate School
Monterey, CA 93943

---

CYBER SECURITY FUNDAMENTALS CERTIFICATE (256)

Curriculum 256 (DL)
MASL# P471026 (DL) (OCONUS)

Course Report Date: Any Quarter

Course Length: 26 / 52 weeks

The Cyber Security Fundamentals graduate certificate is intended to provide a technically rigorous foundation upon which to build knowledge and skills in computer network defense, attack and exploitation. Each course is comprised of both instruction and laboratory exercises involving cyber security aspects of computers and networks. These synergistic activities allow students to internalize key concepts in cyber security. The courses and material covered in the Cyber Security Fundamentals certificate satisfy prerequisite requirements for advanced cyber security courses offered by the Computer Science Department of the Naval Postgraduate School. The three courses in the certificate sequence are a subset of the graduate courses in the Department’s Computer and Network Security specialization track. The total number of NPS graduate credits obtained for the certificate is 13.5, where laboratory credits are counted as half. Courses may be taken two at a time or as a linear sequence of individual offerings. This certificate program can also be applied toward a master’s degree program, e.g. to Curriculum 368.

Course Pre-requisites

Baccalaureate degree, or the equivalent, with above average grades in mathematics, (including discrete math, and differential and integral calculus) resulting in an APC of 325 is required for direct entry. Undergraduate degrees in applied science or engineering are highly desirable. Students lacking these prerequisites may be acceptable for the program, through waivers given by the Academic Associate and Program Officer on a case-by-case basis.

Required Courses:
CS3600 Introduction to Computer Security or CS4600 Secure System Principles
CS3670 Information Assurance: Secure Management of Systems
CS3690 Network Security or CS3695 Network Vulnerability Assessment

POC: Cynthia Irvine, Ph.D.
Email: irvine@nps.edu
Phone: (831) 656-2461
ELECTRONIC WARFARE ENGINEER CERTIFICATE (292)

Curriculum 292
MASL# P170012 (CONUS); P471012 (OCONUS)

Program Start: Any Quarter

Program Length: 52 weeks
This certificate is the first in a series of three Electronic Warfare certificates that leads to a Master of Engineering in Electrical Engineering, MEng (EE). This certificate consists of three courses:

- Antennas and Propagation
- Radiowave Propagation
- Joint Network Enabled Electronic Warfare I

The program uses existing courses in the quarters they are normally offered for our resident students. The pace is somewhat flexible, but generally it is one course per quarter. The DL course sections are delivered via video teleconferencing (VTC) equipment, synchronously with our on-campus sections. Podcasts are available for asynchronous viewing, however these are not self-paced courses, and all course deadlines must be met. Laboratories are also delivered VTC or podcast. The goal is to have the same learning experience for resident and non-resident students.

The courses in this certificate or the other EW certificates need not be taken in order; however, all of the individual course prerequisites must be met before enrolling in the course.

The degree MEng (EE) is awarded upon completion of the three certificates (36 credits with an average GQPR of 3.0).

More information on the Electrical & Computer Engineering Department’s Distance Learning Programs, including a tentative schedule of DL course offerings, is available at:
http://www.nps.edu/Academics/Schools/GSEAS/Departments/ECE/Academics/DistanceLearning/index.html

Quotas: 20

Course Prerequisites:
BSEE degree graduates with a 2.2 GPA or better, or graduates with a degree in a related field of science or engineering with appropriate academic background (knowledge of basic circuits, linear systems and Fourier transforms, probability and statistics, and undergraduate electromagnetic fields and waves).

POC: David Jenn, Ph.D.
Academic Associate
1 University Circle, Spanagel Hall, Rm
414 Monterey, CA 93943
Phone: (831) 656-2254
Email: jenn@nps.edu
HUMAN SYSTEMS INTEGRATION (HSI) CERTIFICATE (262)

Curriculum 262  
MASL #P170002

Course Start: September (only)

Course Length: 52 weeks  
Human Systems Integration (HSI) acknowledges that the human is a critical component in any complex system. It is an interdisciplinary approach that makes explicit the underlying tradeoffs across the HSI domains, facilitating optimization of total system performance in both non-materiel and materiel solutions to address the capability needs of organizations.

The Human Systems Integration (HSI) Certificate program is a distributed learning, graduate-level, non-degree program designed to enable acquisition professionals, program managers, engineers and scientists of the DOD and other Federal agencies to effectively implement Human Systems Integration (HSI) in the acquisition of technological systems.

Students will learn about the domains of HSI; the manner in which HSI is implemented in the acquisition process; and, the tools, techniques, approaches, and methods employed by HSI practitioners. Additional topics include the fundamentals of usability assessments, modeling, optimization, and decision making to demonstrate cost-benefit trade-offs for technical, cost, and schedule modifications in systems acquisition.

The program consists of four online courses taken over a 12 month period. The course content and projects address problems of interest to the DOD and other Federal agencies. Students wishing to pursue a Master’s Degree in HSI can apply the credits gained in this Certificate Program to that degree.

Quotas: Limited to 30 students per year

Course Pre-requisites  
A baccalaureate degree is required. Other requirements include Completion of two or more pre-calculus classes with B or better average; an academic profile code (APC) of 345; completion of DAU ACQ 101 and 201A. Waivers may be considered.

POC: Lawrence Shattuck, Ph.D., COL (RET)  
Program Officer  
Naval Postgraduate School, Gl-234  
1411 Cunningham Rd  
Monterey, CA 93943-5103  
Email: lgshattu@nps.edu  
Phone: (831) 656-2473

INFORMATION SYSTEMS SECURITY ENGINEERING (ISSE) CERTIFICATE (270)

Curriculum 270  
MASL# P170031 (CONUS); P471031 (OCONUS)

Course Start: Any quarter

Course Length: 39 weeks
The role of Information Systems Security Engineering (ISSE) is to help ensure that the security requirements of systems are met. Lacking proper security engineering, systems fail to be certified and accredited, causing costly delays or failures. Ideally the Information Systems Security Engineer (also known as an ISSE) will be a member of the system development team throughout its lifecycle; however, for preexisting systems, the ISSE may be required to assess existing system vulnerabilities and determine mitigating strategies.

As systems have grown more complex and adversaries continue to successfully exploit numerous vulnerabilities, the need for improved secure system engineering and the formation of a larger cadre of skilled ISSEs has become more acute. The ISSE course sequence will provide the knowledge and analytical skills required to contribute productively in system developments and assist in building a larger cadre of skilled ISSEs to combat adversaries.

**Required Courses**
CS3690 Network Security
CS3695 Network Vulnerability and Risk Mitigation
CS4600 Secure System Principles
CS4650 Fundamentals of Information Systems Security Engineering
CS4652 Applied Information Systems Security Engineering

**Quotas: Limited to 30 students per year**

**Course Pre-requisites**
Applicants must have earned a baccalaureate degree to be considered for admission.

**POC: Cynthia Irvine, PH.D.**
Program Manager
1 University Circle, Glasgow Hall, Room-211
Naval Postgraduate School Monterey, CA 93943
Email: irvine@nps.edu
Phone: (831) 656-2461

---

**JOURNEYMAN EW ENGINEER CERTIFICATE (293)**

Curriculum 293
MASL# P170013 (CONUS); P471013 (OCONUS)

**Program Start: Any quarter**

**Course Length: 52 weeks**
This certificate is the second in a series of three Electronic Warfare certificates that leads to a Master of Engineering in Electrical Engineering, MEng (EE). This certificate consists of three courses:
- Introduction to Electro-optical Engineering
- Radar Systems
- Microwave Engineering

The program uses existing courses in the quarters they are normally offered for our resident students. The pace is somewhat flexible, but generally it is one course per quarter. The DL course sections are delivered via video teleconferencing (VTC) equipment, synchronously with our on-campus sections. Podcasts are available for asynchronous viewing, however these are not self-paced courses, and all course deadlines must be met. Laboratories are also delivered VTC or podcast. The goal is to have the same learning experience for resident and non-resident students.
The courses in this certificate or the other EW certificates need not be taken in order, however, all of the individual course prerequisites must be met before enrolling in the course. The degree MEng (EE) is awarded upon completion of the three certificates (36 credits with an average GQPR of 3.0).

More information on the Electrical & Computer Engineering Department’s Distance Learning Programs, including a tentative schedule of DL course offerings, is available at: http://www.nps.edu/Academics/Schools/GSEAS/Departments/ECE/Academics/DistanceLearning/index.html

Quotas: 20

Course Pre-requisites:
BSEE degree graduates with a 2.2 GPA or better, or graduates with a degree in a related field of science or engineering with appropriate academic background (knowledge of basic circuits, linear systems and Fourier transforms, probability and statistics, and undergraduate electromagnetic fields and waves).

POC: David Jenn, Ph.D.
Academic Associate
1 University Circle, Spanagel Hall, Rm 414
Monterey, CA 93943
Phone: (831) 656-2254
Email: jenn@nps.edu

LEAD SYSTEMS INTEGRATOR (LSI) CERTIFICATE (232)

Curriculum 232
MASL# P471007

Program Start: September

Course Length: 52 weeks
The department of Systems Engineering offers a four-course academic certificate in Lead Systems Integration. The courses are designed to provide graduate level courses for senior government engineers, preparing them to assume positions as Lead System Integrators through the exploration of design and trade-off analyses of SoS architectures, the execution of SoS acquisitions, and the engineering implications to the role of the LSI in contract management. The four courses are offered by distance learning with the final course culminating in one week onsite executive experience with face-to-face seminars, discussions and exercises.

Course Pre-requisites:
GPA of 2.6 or better in a technical discipline
Minimum of 5 years acquisition experience

POC: Wally Owen, Senior Lecturer
Program Manager
1 University Circle, Room Bu-201J
Naval Postgraduate School
Monterey, CA 93943
Email: wowen@nps.edu
Phone: (831) 402-6086; (636) 935-2982
The Master of Cost Estimating and Analysis (CEA) is a 24-month, distance learning graduate degree program designed to increase the accuracy and proficiency of DOD cost estimates and cost estimators. It is a joint venture between the Naval Postgraduate School (NPS) and the Air Force Institute of Technology (AFIT). The end result is a professional degree awarded for completing a curriculum focused on the practice of the profession rather than the more general arts or sciences behind the profession. Students will learn cost estimating techniques commonly used in both DOD and industry, and acquire foundation skills and hands-on experience in all aspects of cost estimation, including shipbuilding, aircraft, software, and many other areas. Students take two courses per quarter for eight quarters, beginning the last week of March in every year. Case studies and a capstone project will complete the program. This program blends web-based, online instruction, with video tele-education (VTE), and is especially tailored to students whose careers will not allow them to get away for a full-time graduate education program. While web-based courses are paced week-to-week by the instructors, students have the flexibility to do their coursework at times of their choosing during each week. The VTE classes meet at a pre-determined time, once per week for three hours during the workday.

The MCEA degree is fully accredited and taught by the same faculty that teaches NPS and AFIT resident courses. It is an excellent fit for those officers and government service (GS) personnel whose career track would not otherwise lend itself to receiving a resident technical graduate education.

Quotas: Limited to 30 students per year

Course Pre-requisites
Baccalaureate Degree (BA or BS)
Completion of integral calculus
GPA of 2.6 or better
Written Participation Agreement
Video-Tele-Education or Video Conference (VTE/VTC) location

POC: Daniel Nussbaum, Ph.D.
Program Manager
1 University Circle, Gl-242
Monterey, CA 93943
Phone: (831) 656-2387
Fax: (831) 656-2595
Email: danussba@nps.edu

POC: Greg Mislick, LTCOL, USMC (Ret)
Program Manager
1 University Circle, Gl-202
Monterey, CA 93943
Phone: (831) 656-3113
Fax: (831) 656-2595
Email: gmislick@nps.edu
MASTER OF HUMAN SYSTEMS INTEGRATION (359)

Curriculum 359
MASL# P471107 (OCONUS)

Course Start: September

Course Length: 104 weeks

Human Systems Integration (HSI) is an interdisciplinary program that emphasizes human considerations as a priority in systems design and acquisition, to reduce life cycle costs, and improve total system performance. HSI has been divided into several distinct domains that include human factors engineering, manpower, personnel, training, human survivability, health hazards, system safety, and habitability. HSI is based on the understanding that people (operators, maintainers, and support personnel) are critical elements of the system and that a human-centered design perspective promotes system effectiveness, safety, and cost savings. This degree will provide students with the knowledge, skills, and abilities to be effective leaders in the assessment, design, testing, and management of a total human machine system throughout its life cycle.

Quotas: Limited to one cohort of 35 students per year

Course Pre-requisites
A baccalaureate degree with above-average grades is required. Students without these quantitative prerequisites will be accepted in cases where their undergraduate records indicate that they are exceptional students and there are other indicators of potential. An academic profile code (APC) of 335 is required for the resident program, and 345 for the distance learning program.

POC: Lawrence Shattuck, Ph.D., COL (RET)
Program Officer
Naval Postgraduate School, Gl-234
1411 Cunningham Rd
Monterey, CA 93943-5103
Email: lgshattu@nps.edu
Phone: (831) 656-2473

MASTER OF SCIENCE IN PROGRAM MANAGEMENT (836)

Curriculum 836
MASL# P170209 (CONUS); P471209 (OCONUS)

Course Start: Any quarter

Course Length: 104 weeks

The Master of Science in Program Management (MSPM) degree is designed to provide primarily civilians (officers may participate with sufficient time on station to complete the program) in the Department of Defense (DOD) and other federal agencies an advanced education in the concepts, methodologies and analytical techniques necessary for successful management of programs/projects within complex organizations. The curriculum focuses on leadership, problem solving and decision making within the acquisition environment utilizing case studies, teaming exercises, hands-on applications, active participation and integrative exercises. Lecture and laboratory tasks require the application of critical thinking to problem solving within notional and actual situations. Student input includes civilians (officers) from all DOD services and other federal agencies. The curriculum is designed to provide graduates with the knowledge, skills, and abilities to manage and lead effectively in the federal government acquisition environment.
Quotas: Limited to 30 students per year

Course Pre-requisites
Candidates for the program must have achieved the following: a baccalaureate degree with a minimum undergraduate quality point rating (QPR) of 2.20; full certification at Level II or higher in one of the following career fields: program management; contracting acquisition logistics; test & evaluation; systems planning, research, development and engineering; or manufacturing, production, quality assurance under the provisions of the Defense Acquisition Workforce Improvement Act (DAWIA) (or equivalent certification for non-DoD personnel); and completion of the following two courses: (1) a course in statistics, and (2) a course in calculus.

POC: Brad R. Naegle
Academic Associate
1 University Circle, Room In-206
Naval Postgraduate School
Monterey, CA 93943
Email: bnaegle@nps.edu
Phone: (831) 656-3620

MASTER OF SCIENCE IN SYSTEMS ANALYSIS (MSA) (363)

Curriculum 363
MASL# P170207 (CONUS); P471207 (OCONUS)

Course Start: March/September

Course Length: 104 weeks
The Master of Systems Analysis (MSA) program is a distributed learning, graduate degree program, designed to meet the needs of the Navy, other services in the Department of Defense (DoD) and international partners for technical graduate education in systems analysis as a basis for aiding key decisions on force requirements, weapon systems, and other defense matters. Students acquire foundation skills and hands-on experience in all aspects of analytical studies, which includes the skills to formulate problems, use the analytical process to design study requirements, highlight critical assumptions, recognize strengths and weaknesses of applied analytical methodologies, and evaluate study recommendations.

This program is especially tailored to students whose career pattern will not allow them to get away for a full-time, graduate education program. The entire degree program can be completed at the student’s current duty station. This program consists of a blended mix of distance learning methods. Students take two courses a quarter for eight consecutive quarters with one course delivered asynchronously using web-based instruction (ONLINE) and one course delivered synchronously mostly using video tele-education (VTE). The Web-based instruction is paced week-to-week by the instructors, but the students have great flexibility to do their course work at times of their choosing during each week. The synchronous classes meet at a scheduled time, once per week, usually 0800-1100 Pacific Time (GMT+8). Some of the synchronous classes will use web-based conferencing known as Elluminate Live in lieu of VTE.

Quotas: Limited to 30 students per year

Course Pre-requisites
A baccalaureate degree is required. Completion of mathematics through single variable differential and integral calculus is considered minimal preparation. An academic profile code (APC) of 335 is required.
SENIOR EW ENGINEER CERTIFICATE (294)

Curriculum 294  
MASL# P170014 (CONUS); P471014 (OCONUS)

Program Start: Any Quarter

Program Length: 39 weeks  
This certificate is the third in a series of three Electronic Warfare certificates that leads to a Master of Engineering in Electrical Engineering, MEng (EE). This certificate consists of three courses:

- Radar Cross Section Prediction and Reduction
- Airborne Radar Systems
- Joint Network Enabled Electronic Warfare II

The program uses existing courses in the quarters they are normally offered for our resident students. The pace is somewhat flexible, but generally it is one course per quarter. The DL course sections are delivered via video teleconferencing (VTC) equipment, synchronously with our on-campus sections. Podcasts are available for asynchronous viewing, however these are not self-paced courses, and all course deadlines must be met. Laboratories are also delivered VTC or podcast. The goal is to have the same learning experience for resident and non-resident students.

The courses in this certificate or the other EW certificates need not be taken in order, however, all of the individual course prerequisites must be met before enrolling in the course.

The degree MEng (EE) is awarded upon completion of the three certificates (36 credits with an average GQPR of 3.0).

More information on the Electrical & Computer Engineering Department’s Distance Learning Programs, including a tentative schedule of DL course offerings, is available at:  
[http://www.nps.edu/Academics/Schools/GSEAS/Departments/ECE/Academics/DistanceLearning/index.html](http://www.nps.edu/Academics/Schools/GSEAS/Departments/ECE/Academics/DistanceLearning/index.html)

**Quotas: 20**

**Course Pre-requisites:**
BSEE degree graduates with a 2.2 GPA or better, or graduates with a degree in a related field of science or engineering with appropriate academic background (knowledge of basic circuits, linear systems and Fourier transforms, probability and statistics, and undergraduate electromagnetic fields and waves).

**POC: David Jenn, Ph.D.**  
Academic Associate  
1 University Circle, Spangle Hall, Rm 414  
Monterey, CA 93943  
Phone: (831) 656-2254  
Email: jenn@nps.edu
Space Systems Certificate (SSC) (273)

Curriculum 273
MASL# P170213 (CONUS); P471213 (OCONUS)

Course Start: March / September

Course Length: 52 weeks
The Space Systems Certificate program is comprised of four courses (SS3011, PH3052, SS3613, and PH2514). Upon successful completion of the course work, students will be awarded a certificate of accomplishment in keeping with standard practices of the Naval Postgraduate School. The Space Systems Certificate program supports Navy, DoD and international partner space educational needs and complements existing resident training by providing cross-disciplinary science and technical education. The Space Systems Certificate program is targeted at enhancing the education and preparation for USN and other service Space Cadre personnel. The Navy’s Space Cadre represents a distinct body of expertise horizontally integrated within the Navy active duty, reserves, both officer and enlisted, and civilian employee communities organized to operationalize space.

The requirement to establish a distance learning program for National Security Space (NSS) personnel in space systems and space applications was driven primarily by the DoD-wide space educational requirement identified by the Undersecretary of the Air Force, as the Executive Agent for Space, and documented in the “Commission to Assess United States National Security Space Management and Organization” (2001).

Completion of the Certificate will count toward satisfaction of the Information Professional Advanced Qualification Certification matrix (COMNAVcyberforinst 1520.1).

The NPS Space Systems Certificate (SSC) is comprised of the following four courses:
- SS3011 Space Technology and Applications
- SS3613 Military Satellite Communications (MILSATCOM)
- PH3052 Physics of Space and Airborne Sensor Systems
- PH2514 Physics of the Space Environment

The original course and academic content for the SSC was vetted and approved by USN space and space training leaders. The Space Systems Certificate is a completely Web-based, asynchronous education program that covers fundamental areas of twenty-first century space enhancement to military operations as validated by NETWARCOM (November 2004). The learning outcomes for the SSC Certificate program directly support the Educational Skill Requirements within the Space Systems Operation (subspecialty code 6206P) degree. Evaluation of the Space Systems Certificate occurs in conjunction with the biannual Space Systems curriculum review.

**Quotas: Limited to 30 students per year**

Course Pre-requisites
A baccalaureate degree with above-average grades and completion of college level Algebra 2, and college level Physics (covering electricity and magnetism) with a grade of 'C' or better is required.
SYSTEMS ANALYSIS CERTIFICATE (SA) (281)

Curriculum 281
MASL# P170216 (CONUS); P471216 (OCONUS)

Course Start: March/September

Course Length: 52 weeks
The Systems Analysis Certificate program is a distributed learning, graduate-level, non-degree program designed to meet the needs of the Navy and other services in the Department of Defense (DoD) for non-degree technical education in systems analysis as a basis for aiding key decisions on force requirements, weapon systems, and other defense matters. Students learn and apply modeling, optimization, simulation, and decision making under risk and uncertainty.

The Certificate Program consists of four, fully-accredited courses delivered entirely online over a one-year period. The course content and projects will challenge the student academically and address problems of interest to the Department of Defense. The courses are paced week-to-week by the instructors, but the students have great flexibility to do their course work at times of their choosing during each week.

Quotas: Limited to 30 students per year

Course Pre-requisites
A baccalaureate degree is required. Completion of mathematics through single variable differential and integral calculus is considered minimal preparation. An academic profile code (APC) of 335 is required.

POC: Steven E. Pilnick, Ph.D., CAPT, USN (RET)
Academic Associate
1 University Circle, Room Gl-291
Naval Postgraduate School
Monterey, CA 93943
Email: spilnick@nps.edu
Phone: (831) 656-2283, DSN 2283
Fax: (831) 656-2595
SYSTEMS ENGINEERING (311)

Curriculum 311
MASL# P170020 (CONUS); P471020 (OCONUS)

Course Start: Any Quarter

Course Length: 104 weeks

The Master of Science in Systems Engineering DL degree program is designed for DoD and international partner organizations involved in a wide range of systems engineering and integration challenges. These commands can partner with NPS to educate and train engineers with tools and technologies relevant to their work, resulting in employees with greater knowledge and expertise to enable them to better meet the needs of their customers.

DoD organizations or sponsors provide the students, and the Department of Systems Engineering provides the instruction, course materials, and hands-on experience. Courses are delivered at the students' local site using a combination of on-site instruction, video teleconferencing, and Web-enhanced on-line courses. The program can begin any academic quarter, in accordance with the sponsor's needs.

Students take two courses per quarter over a two-year period. There are ten core courses in the 16-course program. The remaining six courses can be tailored to meet the sponsor's need. Students must participate in a capstone design project in lieu of writing a thesis. Students receive an NPS degree, may receive NPS Systems Engineering certificates of accomplishment, and earn DAU equivalency certificates for all SPRDE Level III training requirements.

The program manager will help establish partnership arrangements with other organizations if desired. Additional information on the program can be found at http://www.nps.edu/Academics/DL/DLPrograms/Programs/degProgs_SE_nonRes.html.

Quotas: Limited to 30 students per year

Course Pre-requisites
An entering student must possess a Bachelor of Science degree in an engineering discipline with at least a 2.2 undergraduate grade point average.

POC: JOSEPH SWEENEY, LECTURER
Program Officer:
1 University Circle, Room Bu-217
Naval Postgraduate School
Monterey, CA 93943
Email: jwsweene@nps.edu
Phone: (831) 656-3452

POC: RONALD GIACHETTI, PROFESSOR
Academic Associate:
1 University Circle, Room Bu-201F
Naval Postgraduate School
Monterey, CA 93943
Email: eppaulo@nps.edu

SYSTEMS ENGINEERING MANAGEMENT/PRODUCT DEVELOPMENT (MS) (721)

Curriculum 721
MASL# P174022 (CONUS ONLY)

Course Start: September (only)

Course Length: 104 weeks

The Naval Postgraduate School (NPS), as a partner in the Massachusetts Institute of Technology's (MIT) "Educational Consortium for Product Development Leadership in the 21st Century" (PD21), is delivering a joint executive systems
engineering management degree using distance learning methods to military officers, senior enlisted, federal civilians and a limited number of defense contractor civilians. The program’s joint focus is on joint services, joint engineering-management and joint government-industry. The joint executive SEM-PD21 degree program is modeled after the prototypic graduate program developed by MIT jointly between their School of Engineering and Sloan School of Management. The executive SEM-PD21 degree is designed to produce a cadre of change agents skilled in engineering and management to bring about dramatic improvements in the way American corporations and the defense industry develop and build new systems and products.

Participants in this unique program are exposed to state-of-the-art concepts and tools, as well as world-class companies, leaders, and cross-industry best practices. Students acquire the foundation skills and strategic perspective necessary to become future leaders and senior managers responsible for driving product development and business growth through innovation, and become effective change agents at their companies. They develop a mindset receptive to change and continuous improvement, an understanding of the enablers to business success, and an enhanced ability to recognize barriers to success early in the product development cycle when corrective actions are least costly.

The SEM-PD21 curriculum is an eight-quarter distance learning curriculum with entry in the fall quarter, which begins in late September with an onsite two-week kickoff at NPS in Monterey, CA. After the kickoff, classes are taken at students' sponsoring command locations by video teleconferencing or online. Students are expected to participate in two-three industry trips during the two-year course of study and a graduation ceremony in Monterey at the completion of the program. There will also be occasional Systems Engineering and Product Development seminars for all SEM-PD21 students within their existing course of study. SEM-PD21 website: http://www.nps.edu/Academics/DL/DLPrograms/Programs/degProgs_PD21.html.

**Quotas: Limited to 30 students per year**

**Course Pre-requisites**

For entry, the student must hold an undergraduate degree in engineering, or a related scientific or technical field, with high academic achievement. The student must be sponsored by an organization committed to supporting the student’s full participation and have at least five years of experience directly related to product development (three years if student holds a master's degree). The application requirements can be found at the joint executive SEM-PD21 website at: http://www.nps.edu/Academics/DL/DLPrograms/Programs/degProgs_PD21.html.

**POC:** Wally Owen, Senior Lecturer
Program Officer
1 University Circle, Room Bu-201J
Naval Postgraduate School
Monterey, CA 93943
Email: wowen@nps.edu
Phone: (831) 402-6086; (636) 935-2982

---

**SYSTEMS ENGINEERING CERTIFICATE (SE) (282)**

**Curriculum 282**

**MASL# P170021 (CONUS); P471021 (OCONUS)**

**Course Start:** March/September

**Course Length:** 52 weeks

Systems Engineering is a disciplined approach to finding the right solution to the right problem: on-time, on-budget, supportable, and with minimal risk.
The Certificate Program consists of four, fully-accredited courses delivered entirely on-line over a one-year period. The course content and projects will challenge the student academically and address current problems of interest to the Department of Defense. The courses are paced week-to-week by the instructors, but the students have great flexibility to do their coursework at times of their choosing during each week.

**Quotas: Limited to 30 students per year**

**Course Pre-requisites**
For entry, the officer must have at least a C+ undergraduate grade point average, with at least one calculus course with a C or better and at least one calculus-based physics course with a C or better (APC 334). If an officer is an outstanding performer but lacks the necessary academic preparation, the Naval Postgraduate School offers refresher and transition courses before the program start.

**POC: Eugene Paulo, Associate Professor**
Academic Associate
1 University Circle, Room Bu-201F
Naval Postgraduate School
Monterey, CA 93943
Email: eppaulo@nps.edu
Phone: (831) 656-3452, DSN 3834

---

**MASTER OF ENGINEERING IN ELECTRICAL ENGINEERING, MEng (EE), ELECTRONIC WARFARE FOCUS (592)**

**Curriculum 592**
MASL# P170015 (CONUS); P471015 (OCONUS)

**Program Start: Any Quarter**

**Program Length: 208 weeks**
This curriculum provides a solid theoretical foundation for electronic warfare (EW) including electronic attack, electronic protection, electronic support and networked operations. Students earn a series of three certificates over a period of approximately three to six years (designated as curricula 292, 293, and 294). Certificate coursework is followed by an optional capstone project (depending on sponsor preferences) in which students work within a group to complete an assigned project in the area of EW.

The program uses existing courses in the quarters they are normally offered for our resident students. The pace is somewhat flexible, but generally it is one course per quarter. The DL course sections are delivered via video teleconferencing (VTC) equipment, synchronously with our on-campus sections. Podcasts are available for asynchronous viewing, however these are not self-paced courses, and all course deadlines must be met. Laboratories are also delivered VTC or podcast. The goal is to have the same learning experience for resident and non-resident students.

The courses in this certificate or the other EW certificates need not be taken in order, however, all of the individual course prerequisites must be met before enrolling in the course.

The degree MEng (EE) is awarded upon completion of the three certificates (36 credits with an average GQPR of 3.0).

More information on the Electrical & Computer Engineering Department’s Distance Learning Programs, including a tentative schedule of DL course offerings, is available at:
http://www.nps.edu/Academics/Schools/GSEAS/Departments/ECE/Academics/DistanceLearning/index.html

**Quotas: 20**
Course Prerequisites:
BSEE degree graduates with a 2.2 GPA or better, or graduates with a degree in a related field of science or engineering with appropriate academic background (knowledge of basic circuits, linear systems and Fourier transforms, probability and statistics, and undergraduate electromagnetic fields and waves).

POC: MONIQUE FARQUES
DL Program Manager
1 University Circle, Spanagel Hall, Rm 462
Monterey, CA 93943
Phone: (831) 656-2859
Email: Fargues@nps.edu
HOUSING OPTIONS AT NPS

ARRIVAL/TEMPORARY QUARTERS

A. Bachelor Officer Quarters. There are three types of lodging available for students in the BOQ (subject to change with renovations), with an additional option for Colonels (O-6) and higher:

- Standard Queen (Deluxe with Kitchenette): $81 ($86 Deluxe)
- Deluxe Queen Suite w/Kitchenette: $96
- Executive Suite with Kitchenette: $114

NOTE: Suites will have sofa sleeper; single rooms will not. Maximum number of people per standard room is 3; per suite is 4. (Single rooms may have a roll-a-way if requested). All rooms have microwave, TV, VCR, refrigerator, hairdryer, coffeemaker, queen-size bed, ironing board, and alarm clock. (Executive rooms have a king-size bed instead of a queen-size.)

B. Navy Lodge/Civilian Hotel. The Navy Lodge is located approximately one mile from campus. Rooms are available at a rate of $85.00 per night or $130 for family rooms. If BOQ or Navy Lodge is unavailable, it is recommended that the student (and his family) be prepared to stay in a hotel for the first week or so while checking out the housing situation (average cost $75-$145 per night per room depending on location and season). Reservations can be made with RESORT TO ME at (800) 757-5646, (831) 646-9250, (831) 642-6622 or http://resort2me.com. This is an agency that will locate accommodations to fit individual family needs; all that is needed is to call, tell them how many people, preferred area, and preferred price range. [Best bet would be Monterey near NPS (also will be more affordable). Obviously if you choose to stay (or live) in Pebble Beach or Carmel, prices will be considerably higher.] Reservations need to be guaranteed with a credit card.

PERMANENT QUARTERS

PRIVATIZED MILITARY HOUSING

A. Privatized military housing is managed by The Michaels Organization, and is available to all international students on a space available basis. Anticipated wait time for move in for 2-3 bedroom houses varies between one week and three months depending on availability. Those families requiring a 4-bedroom house may have up to a 6-month wait. Single Students/Geographic Bachelors are also eligible to live in privatized housing managed by The Michaels Organization. Privatized housing rent includes utilities (gas, electricity, and water). Housing is divided into rank designated areas (O1-O3 and O4-O6).

1. Foreign Military Sales (FMS). FMS Students pay rent out of their own pockets (i.e., not subsidized by the US government). FMS students, married and accompanied by their families, living in privatized (government) housing, pay $2,207 per month for a furnished house.

2. International Military Education and Training (IMET) and Combating Terrorism Fellowship Program (CTFP). IMET students (who receive an IMET living allowance) and CTFP funded students living in government housing are charged rent based on their basic allowance for housing (BAH) rate which is determined by their rank. See chart below.
The FY17 privatized housing rates for married/accompanied and single international officers receiving an IMET/CTFP Living Allowance are broken down below.

<table>
<thead>
<tr>
<th>Rank</th>
<th>w/dep</th>
<th>w/o dep</th>
</tr>
</thead>
<tbody>
<tr>
<td>O-1</td>
<td>$2,379</td>
<td>$2,016</td>
</tr>
<tr>
<td>O-2</td>
<td>$2,964</td>
<td>$2,325</td>
</tr>
<tr>
<td>O-3</td>
<td>$3,297</td>
<td>$2,736</td>
</tr>
<tr>
<td>O-4</td>
<td>$3,531</td>
<td>$3,108</td>
</tr>
<tr>
<td>O-5</td>
<td>$3,696</td>
<td>$3,183</td>
</tr>
<tr>
<td>O-6</td>
<td>$3,732</td>
<td>$3,303</td>
</tr>
<tr>
<td>O-7</td>
<td>$3,771</td>
<td>$3,369</td>
</tr>
</tbody>
</table>

Furniture will be made available to IMET and CTFP-funded students residing in privatized military housing and reimbursed at the BAH rate through a program sponsored by the International Graduate Programs Office and administered by the Michael’s organization.

B. Privatized-housing rates for single/unaccompanied officers are: FMS – $2,207 per month (this rate is usually adjusted every January, based on the Consumer Price Index (CPI) rate of inflation). Students receiving IMET/CTFP Living Allowance pay the BAH unaccompanied rate.

**IMET LIVING ALLOWANCE RATES**

- Staying in Hotel (upon arrival; max of 30 days) – up to $86/day + $80/day per diem
- Staying in Privatized Housing (married & accompanied) - BAH RATE/month + $80/day
- Staying in Privatized Housing (single, geographical bachelors) – Unaccompanied BAH rate (IMET) + $80/day per diem
- Married, unaccompanied OR single; living in permanent Civilian Housing up to $86/day + $80/day per diem
- If your family is authorized on your ITD and will be arriving later, you will be allowed to pay the without-dependent rate for the first 30 days only. After 30 days, you will be required to pay the with-dependent rate.

**CIVILIAN HOUSING OPTIONS**

- Average cost of a one or two-bedroom apartment (unfurnished) is $950-1500 per month plus utilities. Basic Cable begins at $53 and up per month. Basic telephone charges with no special services (i.e., call waiting, call forwarding, etc.), is approximately $26 per month. There are several long distance companies to choose from. Utilities vary by apartment and usage.

- The NPS Housing Welcome Center has established an excellent web site for reviewing rental options in Monterey. Check out the following site: [www.ahrn.com](http://www.ahrn.com) (note - you will need to register in order to gain access to the lists)

**MISCELLANEOUS**

- The Michaels Organization has furniture available for use by international families living in La Mesa Village or former Fort Ord housing.

- Furniture Locker. The International Executive Committee maintains a Furniture Locker, which contains used furniture that may be “rented” for a nominal fee by international students during their stay at NPS.
Other options for used furniture include:

1. Goodwill Industries, 729 Broadway St, Seaside, Phone: 394-1212
2. St Vincent De Paul, 1269 Fremont Blvd, Seaside, Phone: 899-2211
3. Goodwill Industries 571 Lighthouse Ave, Monterey, Phone: 649-6056

Renter’s Insurance. As of February 2015, The Parks at Monterey Bay (La Mesa and Fort Ord housing) no longer provides insurance coverage for residents, so students will be required to obtain and provide a copy of renter’s insurance before signing a lease. You will be required to obtain and maintain Renter’s Insurance throughout your tenancy with a minimum liability of $10,000 per occurrence and a maximum deductible of $500.00. Renter’s insurance must be presented at lease sign.
MEDICAL INFORMATION

1. **General Information** – Medical Facilities in Monterey are extremely limited and all students coming to NPS should be thoroughly aware of what is and is not available - particularly when considering medical options for family members.

There is **no full-service military hospital** on the Monterey Peninsula. The nearest full service military treatment facility (MTF) is located at Travis AFB (outside Sacramento, approximately 3 ½ hours driving time). This is especially critical when dealing with pregnancy related treatment (particularly baby delivery). NOTE: Foreign military or their dependents are not allowed to seek care for pregnancy or routine visits at the Travis AFB unless referred by the the Presidio of Monterey Army Health Clinic (POMAHC).

The only available military facility in Monterey is the Presidio of Monterey Army Health Clinic (POMAHC) with emphasis on the word - clinic! All active duty military are required to seek assistance at the clinic before going to a civilian doctor unless it is an immediate or life threatening emergency. The clinic will provide a referral to a civilian facility if treatment is beyond the capabilities of the clinic. The Presidio of Monterey Army Clinic hours are 0700-1600 M-F. Call the appointment desk at 866-957-2256.

The clinic **does not** provide appointments for family members. This means that international officers with families will be required to use civilian facilities, especially for emergency treatment and also for routine care. **This also includes students from countries who have reciprocal medical agreements with the U.S.**

2. **Medical Care for Civilian Students** – The Army Health Clinic at DLI is NO LONGER seeing civilian students. Civilian students will need to seek medical treatment with a civilian physician. It is recommended that unless it is an emergency involving broken limbs, irregular heartbeat or breathing, etc. that civilian students first seek treatment from Doctor’s on Duty or another Urgent Care Facility. For emergencies as noted above, or for treatment after hours, the student would go to the nearest Emergency Room (Community Hospital of Monterey Peninsula (CHOMP). The student’s ITO should have the mailing address for billing. The treating physician/facility may or may not bill the responsible agency directly. If after receiving treatment, you receive the medical bills, please bring them to the Health Benefits Advisor, Jalpa Zambrano, 831-656-2416, NPS, Herrmann Hall, 4th floor, in the Dental Clinic area, so she can forward them for payment. If you pay for any treatment and/or prescriptions yourself, you will need to bring your receipts to the health benefits advisor’s office to fill out a claim for reimbursement which she will submit so you can be reimbursed.

3. **International Military Student Procedures** – International Military Students are eligible and required to use the POMAHC for their health needs and must schedule appointments for all routine and urgent health care needs unless referred to a civilian facility by a military doctor at the POMAHC. All non-emergency after-hour care must be coordinated with the Nurse Advise Line by dialing (800) 874-2273 Option 1. For emergency care (threat to life, limb, eyesight), members should go to the closest available Emergency Room, which for the Monterey Peninsula is the Community Hospital of the Monterey Peninsula (CHOMP) or dial 911. Please note that health coverage for international students is based upon agreements between the United States Government and their home country. Billing procedures may vary from country to country, particularly for referrals to civilian doctors. For more information, please contact Jalpa Zambrano, Health Benefits Advisor at NPS, (831) 656-2416, email: jjzambra@nps.edu. In addition, please contact the Health Benefits Advisor as soon as possible after your ER or urgent care visit.

4. **International Military Family Member Procedures** – International Student Family Members have limited military options and should plan on obtaining most of their medical services through civilian providers for which they are financially responsible and must have all medical costs covered by the FMS Case, Foreign Government or individual medical insurance policies.
MEDICAL INSURANCE FOR DEPENDENTS (AND IMS) NOT COVERED BY THE FMS CASE OR THE FOREIGN GOVERNMENT

(1) In accordance with DSCA Policy Memorandum 11-32, International Military Students, Civilians, and Authorized Dependents Healthcare Coverage, dated 15 Aug 2011, international students whose dependent medical costs are not covered by their government or the FMS Case, need to provide proof of dependent medical insurance to the Security Cooperation Office at the US Embassy in their country before their dependents can be authorized on their ITO. Upon arrival at NPS, the student will be required to provide a copy of their insurance policy. The policy needs to be in effect for the duration of their stay at NPS, and must meet the requirements as listed in paragraphs 2, 3 and 4 below.

(2) Minimum requirements for medical insurance
   (a) Medical benefits of at least $400,000 per year, per person. Duration of policy must be for minimum of one year or remainder of time left at NPS, whichever is less.
   (b) Annual deductible not to exceed $1000 per family.
   (c) Students with accompanying spouses (or female students) must also have pregnancy insurance (in addition to basic medical insurance policy) if planning to get pregnant while in Monterey (see paragraph (3)).
   (d) Repatriation of remains in the amount of $50,000 per person, should a death occur in the US. Note: this would provide for the preparation and transportation of remains to home country.
   (e) Medical evacuation in the amount of $250,000 per person in the event insured must be returned to his/her home country due to a serious medical condition.
   (f) Policies must be payable in us dollars at amounts specified in current DSCA policy and not foreign currency that, due to exchange rates, could be in lesser amounts when converted into dollars.
   (g) Insurance must pay benefits to a department of defense medical facility if appropriate.
   (h) Health insurance policy must be in English and be recognized as an international company and have a POC in the United States.

(3) Pregnancy
   (a) Because of the new higher cost medical policies now in effect, NPS requested and received a waiver for the requirement for dependent pregnancy coverage (Dec 2010). This means that you do not have to have pregnancy insurance for your wife, while you are attending NPS if you are not planning to have a baby.

   However, the waiver comes with the stipulation that if your wife becomes pregnant and does not have coverage as required by the US Dept. of Defense Regulations, she will be directed to return home immediately. Failure to notify the IGPO of impending pregnancy as soon as you become aware will result in disenrollment.

   If you are planning to have a baby, and all costs associated with pregnancy are not covered by your government (as indicated on your ITO) you need to secure pregnancy insurance prior to your wife getting pregnant. Foreign military/foreign civilians and their family members are qualified for pregnancy insurance coverage within 60 days of arrival to the United States or during the open enrollment period usually November 15-February 15.

   Pregnancy insurance requirements are as follows:

   Pregnancy insurance must include coverage of pre and post-natal care, as well as delivery, of at least $250,000 (this is in addition to the $400,000 minimum coverage for basic medical insurance). If medical costs are paid by your country, country will be notified of impending pregnancy through official channels.
(b) If a spouse becomes pregnant while at NPS, the student will notify the international programs office immediately. If medical costs are paid by the country, the country will be notified of the pregnancy.

(c) Unless the ITO specifically states foreign government or FMS case will pay all costs related to that pregnancy and delivery, spouses who are pregnant prior to departure for Monterey must present proof of complete pregnancy coverage prior to being authorized as an accompanying dependent on the ITO.

(4) International students and their dependents while attending NPS are not authorized to participate in US federal or state medical/dental programs (this includes, but is not limited to: AIM, Medicaid, MediCal and other Federal/State programs).

(5) Civilian Medical Services
Listed below are the recommended civilian hospitals in the Monterey Area:

**Community Hospital of the Monterey Peninsula (CHOMP)**
23625 Holman Highway, Monterey, 831-625-4900

**Natividad Medical Center**
1441 Constitution Blvd, Salinas, 831-755-4111/831-755-6268

**Salinas Valley Memorial**
450 East Romie Lane, Salinas, 831-372-7844/831-757-4333

Listed below are the Urgent Care facilities available in Monterey:

**Doctors on Duty – no appointments needed**
501 Lighthouse Ave, Monterey, 831-649-0770 (Mon-Fri 0800-2000 / Sat & Sun 0800-1800)
1513 Fremont St, Seaside, 831-899-1910 (Mon-Fri 0800-1800 Sat 0800-1500)
Average office visit $187-$337 depending on service

**Monterey Bay Urgent Care**
245 Washington St, Monterey, 831-372-2273 (press 0 to speak to the receptionist) (Mon-Fri 0730-1800)
(Sat/Sun 0900-1700)
Average office visit $100 and up
FIELD STUDIES PROGRAM

1. The Field Studies Program (FSP) is sponsored by the United States Government and is designed to familiarize international students with American society, institutions, history, and goals. It is funded from international tuition and includes numerous local and regional trips. Local events include the Monterey County Fair, and the Monterey Aquarium. We also sponsor quarterly trips to San Francisco, and visits to Stanford University and the University of California at Berkeley. Three trips to our state capitol, Sacramento, are also conducted each year; as are several trips to our state parks to include one of our most picturesque national landmarks, Yosemite National Park. The program also includes two trips each year to our nation’s capital, Washington D. C, with side trips to the Gettysburg battlefield and the United States Naval Academy.

   **Field Studies topic areas include:**
   - Law of War
   - International Peace and Security
   - U.S. Government Institutions
   - Political Processes
   - Judicial System
   - Free Market System
   - Media
   - Education
   - Health and Human Services
   - Diversity and American Life

2. The International Graduate Programs Office sponsors a seminar covering these topic areas that is required to be taken in the first or second quarter of each student’s academic schedule. Seminar description is as follows:

   **IT 1500 Informational Program Seminar for International Officers (4-0).**

   This class provides International students with an awareness and functional understanding of internationally recognized human rights and the American democratic way of life. Areas of emphasis introduced during the seminar include civil-military relations, human rights, relationships in a democratic society, and a comparative look at the U.S. free enterprise system. This is a graded course.

3. All transportation, lodging, entrance fees, and most meals are funded by the International Graduate Programs Office. These trips are offered on a voluntary basis to all International students and some of the trips include family participation.
GENERAL INFORMATION

1. **Location:** Monterey, CA is 2½ driving hours south of San Francisco; the International Graduate Programs Office (IGPO) is located aboard NPS, Herrmann Hall, Bldg. 220, Basement Floor, Room B-047.

2. **Student Arrival/Departure Info:** Preferred Airport - Monterey, California, which is located about 3 miles from NPS, is served by several flights daily from San Francisco and Los Angeles. Students terminating their flights in either San Francisco or Los Angeles will be responsible for arranging their own transportation to Monterey.

3. **General Info:** The IGPO will coordinate pickup of arriving students at Monterey Airport if we receive notification of ETA and carrier. If unable, commercial taxi service is readily available from the airport to the school (5 minutes). Use Yellow Cab [(831) 333-1234] as they are the only company with gate access to NPS. If you are IMET/CTFP Funded, bring your cab receipt to the IGPO for reimbursement.

4. **Transportation:** No military transportation is available; local public transportation is limited. It is recommended students bring adequate funds to purchase a used car.

5. **Messing:** There is no full service military messing facility at NPS. Continental breakfast, lunch and dinner are available at the El Prado Dining Room located in Herrmann Hall (co-located with the Transient BOQ facility). When possible, international students are housed in rooms with a kitchenette to aid in meal preparation.

WEATHER

“Sunny California” is not a true description of this part of the state. Throughout the year, daytime temperatures vary. The rainy season usually goes from December through March. Average rainfall is approximately 20 inches; however summers are generally damp and foggy. But even at night, winter temperatures rarely reach freezing. With very rare exceptions the days are never hot (over 65-70 F). Nighttime temperatures range from about 40 - 60 F. Annual mean temperature is 64 degrees Fahrenheit.

CLOTHING

1. **Men:** Uniforms are worn once a week (Tuesday) and for graduation. It is recommended that you have at least one winter and one summer uniform. The normal uniform of the day for class is casual business dress. (Collared shirts and slacks) Slacks, sports jackets, and sweaters are fine for practically any occasion.

2. **Women:** Uniforms are worn once a week (Tuesday) and for graduation. It is recommended that you have at least one winter and one summer uniform. The normal uniform of the day for class is casual business dress. Slacks and pantsuits are warm, comfortable and practical throughout the year. Of course, bring clothing that is considered appropriate for an occasional dance or evening of entertainment. A lightweight coat with a removable lining is very good for warmth throughout the year for both men and women.

3. **Children:** Shirts, undershirts and slacks (for boys); dresses, blouses, and slacks (for girls); and socks, sweaters, a coat with removable lining and a raincoat for both boys and girls.

All the clothes you may need can be purchased locally.

Native Costumes, if you have them, can be worn for International Day and other special occasions.
MONTEREY PENINSULA MAP

Pacific Grove Shoreline Park
Asilomar
17 Mile Drive
Carmel
Aquarium
Cannery Row
Fisherman’s Wharf
Historic Monterey

NAVAL POSTGRADUATE SCHOOL
INTERNATIONAL GRADUATE PROGRAMS CATALOG
HIGHWAY MAP

Mileage approximate. Times figured at 55 mph.

BIG SUR — 26 miles; 40 min.

HOLLISTER — 50 miles; 1 Hr. Take Hwy. 1 to Hwy 156. Follow the signs after you turn north on Hwy 101.

LOS ANGELES — 330 miles; 8 hours on Highway 101.

MOSS LANDING — 25 miles; ½ hour. Many antique shops.

RENO, NEVADA & LAKE TAHOE — 330 miles; 8 to 10 hours (see next.)

SACRAMENTO — California State Capitol. 190 miles; 4 to 5 hours. Take Highway 1 north to 156 to Highway 101. Go north to Highway 152 at Gilroy. Take 152 through the mountains to Interstate 5. Follow the signs north.

SALINAS — 15 miles; ½ hour drive on Highway 68.

SAN FRANCISCO — 120 miles; 4 hours. Scenic route is Coast Highway 1. Faster time on Highway 101.

SAN LUIS OBISPO — 130 miles; 4 to 5 hours south on Highway 1.

SAN JOSE — 75 miles; 1½ to 2 hour drive on Highway 101.

SAN JUAN BAUTISTA — 40 miles; ½ to 1 hour. A nice side trip — shops and a Mission.

SANTA CRUZ — 45 miles; ½ hour. Take Highway 1 North. Follow the signs.
The Monterey Peninsula lies midway along the California coast and is often called “the cradle of California history.”

Juan Rodriguez Cabrillo sighted La Bahia del los Pinos (Bay of Pines), now Monterey Bay; only 50 years after Columbus discovered the New World. Sixty years later, Sebastian Viscaino landed there and reaffirmed Spain’s claim to the area and named the place of his landing “Monte Rey” for the Viceroy of New Spain, the Count of Monterey. For more than 60 years thereafter, the area was neglected and forgotten. The first permanent building, the Mission San Carlos de Borromeo, was established in 1770. In 1776, Spain named Monterey as the capital of its Pacific empire, including Baja and Alta California. Thus, in the same year that the United States proclaimed its independence on the Atlantic Coast, Monterey became the center of Spanish activity on the Pacific Coast. At this time, Spanish and Mexican rancheros were settling their immense grants of land around Monterey and the area thrived as a center of governmental and cultural activity.

The flag of the United States was raised over Monterey in 1846 by Commodore John Sloat, who had arrived on the frigate Savannah. Monterey became the first capital of the new State of California, and the California constitution was written there in 1849. After a brief period, however, the capital was moved to San Jose, and when gold was discovered in other parts of the state, the Monterey area lapsed into another period of obscurity.

Toward the close of the nineteenth century, outsiders began to discover the beauty of the area. The establishment of the Del Monte Hotel helped in the development of Peninsula as a resort area, and distinguished visitors from all around the world began to vacation in Monterey.

In 1900, the population of Monterey was less than 2,000 and the city was, for the most part, a rather dilapidated collection of old adobe and frame buildings. However, as in many other parts of California, the Peninsula began to grow and has experienced phenomenal increases in population and activity since about 1940.

Today, the Monterey Peninsula offers the same natural beauty it has always possessed. In addition to its historic landmarks, many art galleries, fine restaurants and shops, famed golf courses, and other cultural activities, it is home to a number of prominent educational institutions -- many with an international orientation. In addition to the Naval Postgraduate School, the U.S. Defense Language Institute and the Middlebury Institute of International Studies are leaders in their respective fields.

HISTORY OF THE NAVAL POSTGRADUATE SCHOOL

Before World War II one of the finest luxury hotels in North America, the Del Monte Hotel, occupied the present site of the Naval Postgraduate School. From its opening in July, 1880, it was an immediate success. The entire hotel was destroyed by fire in 1887, but the second Del Monte Hotel rose promptly at the same location and was more splendid than its predecessor. In the early morning of September 27, 1924, fire again devastated the central wooden structure of the hotel. Reconstruction was again immediate and the more modern building continued to make the Del Monte one of the showplaces of the world.

In 1942, the hotel was taken over by the U.S. Navy and was used as a pre-flight school for aviators. By the end of World War II, it had become apparent that the facilities of the Naval Postgraduate School at the Naval Academy at Annapolis, Maryland, would be insufficient for the Navy’s future needs. Thus, in 1947, Congress authorized the purchase of the Del Monte property and the Postgraduate School was officially moved from Annapolis to Monterey in 1951.
The main building of the former Del Monte Hotel -- now named Herrmann Hall -- which once played host to world dignitaries, houses the principal administrative offices of the Naval Postgraduate School. The academic quadrangle was built incrementally after the school officially opened for business in 1951. The most recent additions include the renovation of the library (more than doubling its usable space), the new academic building - Glasgow Hall, and our Mechanical Engineering Building. We also completed an extension to Glasgow Hall, and a $35 million renovation of the two wings of Bachelor Officers’ Quarters (BOQ) located in Herrmann Hall. Additionally, a new classroom building Reed Hall was completed in 2012 with numerous renovations to other class room buildings (Spanagel and Root Hall). Finally, a two year renovation of the exterior of Herrmann Hall was completed in 2014.
CHANGE 3