



JOINT EXECUTIVE DEFENSE SYSTEMS ENGINEERING MANAGEMENT (SEM)

Joint Executive Defense Systems Engineering Management (SEM-PD21)

Naval Postgraduate School
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**For more information on
this unique and exciting
Joint Executive program:**

Visit our website at:
ocl.nps.navy.mil/pd21

or contact the SEM-PD21 Program Director:
in Monterey, 831.656.2792
in St. Louis, 636.925.2982

**THE RIGHT EDUCATION FOR
REAL TRANSFORMATION**



Wayne E. Meyer Institute
of Systems Engineering
Graduate School of
Business & Public Policy
Graduate School of
Engineering & Applied Sciences

DISTANCE LEARNING PROGRAM

Offered in partnership with MIT's
**Educational Consortium for
Product Development Leadership
in the 21st Century (PD21)**

A JOINT INTEGRATED SYSTEMS PERSPECTIVE FOR EXCELLENCE IN DEFENSE

Now a limited number of qualified military officers, senior enlisted, federal government civilians and defense contractor civilians can participate in the **Systems Engineering Management (SEM-PD21)** program, a pioneering executive leadership program designed to prepare today's technical experts and systems engineers for successful careers as program leaders and technically grounded senior managers of their business enterprises without leaving the workplace.

RELEVANT CURRICULUM

The SEM-PD21 program is a groundbreaking interdisciplinary leadership program designed for senior engineering and technical professionals. By integrating engineering and management elements, the program strives to develop a new kind of leader with a holistic perspective and knowledge base of the total life-cycle acquisition system. Students acquire the foundation skills and strategic perspective necessary to become future leaders and senior managers responsible for driving business growth through innovation, and become effective change agents at their companies or organizations. 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 a system's development cycle when corrective actions are least costly. The SEM-PD21 program is the educational foundation needed by technical leaders to drive systems engineering innovations and help achieve acquisition excellence.

IMAGINE THE POSSIBILITIES

Students in the joint executive SEM-PD21 program will be exposed to the latest state of the art concepts, tools and best practices, both private and public, in systems engineering and management from experienced faculty who have worked in the defense industry and completed defense relevant research and/or consulting and through industry visits of successful companies in both defense and commercial sectors. One of the key value propositions of the program is "collaboration." Not only jointly within defense and across the services but also with its defense industry partners. Imagine the possibilities when high potential future leaders participate and collaborate side-by-side in a non-threatening educational environment studying and analyzing how to improve the way defense does business.



Program Description

The SEM-PD21 program is a 24-month, part-time program with students taking two courses per quarter in an executive format once a week taught using a blended approach of distance learning that includes video tele-education (VTE) and some web-based education (WBE) which allows the program to be offered virtually to any organization equipped with the appropriate technology and equipment. Students selected into the program also participate in at least two industry visits and attend a two-week kickoff and a graduation ceremony at NPS in Monterey, California.

NPS and the PD21 consortium believe that this joint engineering & management degree is the best unified curriculum available in systems engineering and end-to-end product development leadership education. It ideally aligns with defense leadership vision for transformation and acquisition excellence. All students who successfully complete the two-year distance-learning course of study will receive:

- **Degree:** Master of Science in Systems Engineering Management, Systems Engineering or Product Development
- **PD21 Certificate:** Certificate of Recognition from MIT
- **DAU Equivalencies:** Defense Acquisition University (DAU) ACQ101, ACQ201, PMT250, SYS201 and SYS301 meeting DAWIA level III training requirements for the Systems Planning, Research, Development & Engineering (SPRDE) career field

Students have great flexibility in designing an elective structure. Currently, there are 5 advertised elective tracks that when taken with the 10 core courses earn students additional certifications:

- Systems Acquisition (SA) track for equivalency with DAU PMT352
- Information Systems Operations (ISO) track
- Advanced Systems Engineering (SE) track
- Software Engineering (SWE) track
- Space Systems (SS) track

Application Process

To be considered for the joint executive SEM-PD21 program, an applicant must meet the following criteria:

- Uniformed officer (O4 and above), senior enlisted (E7 and above), federal civilian (GS12 and above) or equivalent contractor civilian
- An undergraduate degree in engineering or a related scientific or technical field with high academic achievement (2.6 or greater GPA)
- At least five years experience directly related to systems development, engineering, acquisition, operations or support. (Requirement reduced to three years for applicants that hold a masters degree.)
- Endorsed by senior leadership of your service, command or company

Program Capacity & Technology Requirement

A new joint executive SEM-PD21 cohort program begins each September with a maximum of 25 students. Each service is allocated 5 seats, defense contractors 5 seats and open enrollment for 5 remaining seats. To participate, students must have access to a two-way audio-video standards-based teleconferencing dialup network capability at 384KBPS and to the Internet.

KICKOFF IN MONTEREY, END OF SEPTEMBER

Separate Agenda provided for 2 week kickoff at NPS

Course introductions, meet the faculty, design challenge, Silicon Valley trip, meet graduating students, sit in on student thesis presentations and attend graduation.

Quarter 1 Fall

- Leadership in Product Development
- Organizational Processes
- Seminar in Systems Engineering

Quarter 2 Winter

- Systems Engineering for Product Development
- Finance & Managerial Accounting
- Seminar in Systems Engineering

Quarter 3 Spring

- Systems Architecture
 - Engineering Risk Benefit Analysis
 - Seminar in Systems Engineering
- One-week Industry visit at end of quarter*

Quarter 4 Summer

- Marketing Management
 - Systems & Project Management
 - Seminar in Systems Engineering
- ONR Government-Industry Conference*

Quarter 5 Fall

- Systems Optimization
- Elective Course—see tracks
- Seminar in Systems Engineering

Quarter 6 Winter

- Operations Management
- Elective Course—see tracks
- Seminar in Systems Engineering

Quarter 7 Spring

- Thesis Research
- Elective Course—see tracks
- Seminar in Systems Engineering

Quarter 8 Summer

- Thesis Research
 - Elective Course—see tracks
 - Seminar in Systems Engineering
- Graduation Week at NPS: end of September*

