Systems Engineering Distance Learning Education Summit
23 February 2022
by
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Monterey, California

- NPS Systems Engineering Program Overview

- Summer 2022 Program Offerings.

- Looking ahead to the Fall 2022.
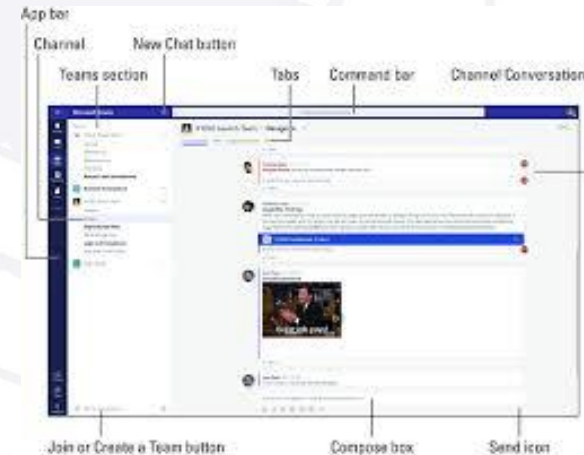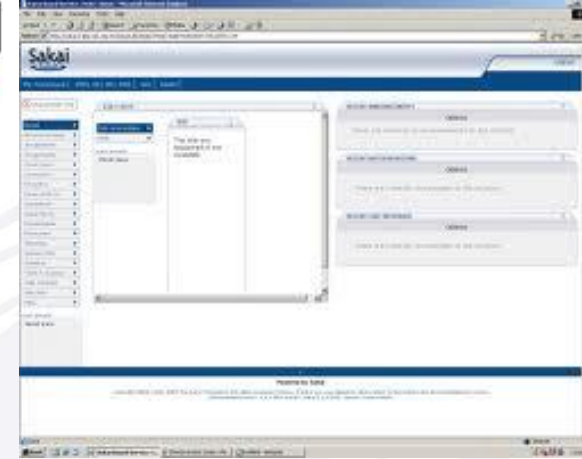
- For organizations with a strategic vision to provide world-class systems engineering, systems integration and systems engineering management services
- Recognized as a leader in field of distance learning (DL)
- Each DL course offer as one continuous (3) hour web-conferencing session one day per week (times/days vary)
- All web-conferencing sessions are recorded
- Typical certificate program offered as one course per quarter (4 total) consecutively over four quarters
- Typical degree program offered as two courses per quarter (16 total) over eight consecutive quarters or as four stackable certificates
- All SE and SEM programs accredited by WASC and MSSE degree also accredited by ABET

- Collaborative Learning Environment
  - Sakai web-based courseware

- Multiple Teaching Types for DL Education
  - Synchronous/Asynchronous Web Browser Based
    - *Zoom for Gov and/or MS Teams* used for teaching synchronously
      - Video, Voice, Chat, Desktop Sharing
    - *Sakai* used for teaching asynchronously

- SE Computer Lab Available Worldwide

- NPS Library Resources Available Worldwide
  - Books, Journals, Databases all on-line

- On-Site Face-to-Face Classrooms
  - Classroom facilities located in Washington, DC (Pax River, MD) and San Diego, CA

- The SE Department has partitioned its DL program offerings into stackable certificates
- Stackable certificates enhances the value proposition:
  - Sponsors can fund only those academic certificates for which they have an immediate need
  - Students will be able to earn a MS degree by stacking together academic certificates
- Supports Navy advanced education strategic plan and the new Engineering & Technical Management (ETM) functional area competency framework
  - Offers a customization approach to provide systems engineering and systems engineering management advanced education options for workforce development
  - Provides a graduate degree path for students that have earned certificates from other departments or schools

- SE offers DL graduate certificates and degree programs that are tailorable to sponsors and their students
- Stackable certificates can meet master's degree curricula requirements leading to MSSE, MSES or MSSEM degrees
- Certificates are identified by tiers and are typically taken in sequence but may vay by certificate
- Each tier certificate can be tailored dependent on the ultimate curricula (311 or 711) and degree desired

Tier I SE Fund Cert 4 Courses	Tier II SE/SEM Core Cert 4 Courses	Tier III SE/SEM Domain Cert 4 Courses	Tier IV SE/SEM Cap Cert 4 Courses

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Qtr	Yr/Qtr	Course Title	Course Title
1		Fundamentals of Systems Engineering	Probability and Statistics for SE
2		Fundamentals of Engineering Project Management	Capability Engineering
3		System Suitability	Engineering Economics and Cost Estimation
4		SE CERT Focus Course and/or Elective	Systems Architecting and Design
5		SE Domain Specialty Track	System Integration and Development
6		SE Domain Specialty Track	SE Capstone Project- I
7		SE Domain Specialty Track	SE Capstone Project- II
8		SE Domain Specialty Track	SE Capstone Project- III

Overlaid text:
- **282 Systems Engineering Certificate**
- **131 System Capability And Design Certificate**
- **Various Domain Speciality**
- **130 Systems Engineering Capstone**

Tier I SE Certificate	Tier II SE Core Certificate	Tier III SE Domain Certificate	Tier IV SE Capstone

Qtr	Yr/Qtr	Course Title	Course Title
1		Fundamentals of Systems Engineering	Intro to Digital Engineering with Model-Based System Engineering
2		Fundamentals of Engineering Project Management	Probability and Statistics for HSI
3		System Suitability	Engineering Economics and Cost Estimation
4		SE CERT Focus Course and/or Elective	Human Factors in Systems Design
5		SEM Domain Specialty Track	Risk Analysis & Management of Engineering Systems
6		SEM Domain Specialty Track	Modeling & Simulation in Acquisition
7		SEM Domain Specialty Track	SEM Capstone Project- I
8		SEM Domain Specialty Track	SEM Capstone Project- II

282 Systems Engineering Certificate

171 System Capability And Design Certificate

Various Domain Speciality

170 SE Management Capstone

Tier I SE Certificate	Tier II SEM Core Certificate	Tier III SEM Domain Certificate	Tier IV SEM Capstone

- 282 Systems Engineering (Fundamentals)
- 232 Lead Systems Integration (Domain Specialty)
- 242 Reliability & Maintainability Engineering (Domain Specialty)
- 130 SE Capstone (SE Advanced)
- 131 Systems Capability & Design (SE Core)
- 132 System of Systems Engineering (Domain Specialty)
- 133 Model-based Systems Engineering (Domain Specialty)
- 134 Aviation Systems (Domain Specialty)
- 135 Systems Test & Evaluation (Domain Specialty)
- 136 Directed Energy Systems (Domain Specialty)
- 137 System Safety Engineering (Domain Specialty)
- 138 Digital Engineering (Domain Specialty)
- 170 SEM Capstone (SEM Advanced)
- 171 Systems Integrated Development (SEM Core)
- 172 Systems Technology & Advancement (Domain Specialty)

Systems Engineering Non-Resident Master's with a Focus in Model-Based Systems Engineering, Digital Engineering or Systems Technology and Advancement

Commencing Tuesday, 5 July 2022

Program Delivered via Distance Learning

Sponsor Code: Open Enrollment (311-224O)

		Course Lineup*	
Qtr	Year/Qtr	Tuesdays 0800-1100 PT	Thursdays 0800-1100 PT
1	AY22/Summer	SE3100 Fundamentals of Systems Engineering	OS3180 Probability & Statistics for SE
2	AY23/Fall	SI3400 Engineering Project Management	SE3250 Capability Engineering
3	AY23/Winter	SE3302 Systems Suitability	SE3011 Eng Economics & Cost Estimation
4	AY23/Spring	SE4012 Management of Advanced Systems Eng.	SE4150 Systems Architecting & Design
5	AY23/Summer	133-MBSE, 138-DigE, 172-STA	SE4151 System Integration & Development
6	AY24/Fall	133-MBSE, 138-DigE, 172-STA	SE3201 Engineering Systems Conceptualization
7	AY24/Winter	133-MBSE, 138-DigE, 172-STA	SE3202 Engineering Systems Design
8	AY24/Spring	133-MBSE, 138-DigE, 172-STA	SE3203 Eng Systems Implementation & Operation

SE Certificate Course	SE Core Course	SE Domain Focus	SE Capstone Project

Application Deadline: 28 March 2022

Systems Engineering Management with Systems Technology and Advancement Focus

Commencing Wednesday, 6 July 2022

Program Delivered via Distance Learning

Sponsor Code: Open Enrollment (711-224P)

Qtr	Year/Qtr	Course Title	
1	AY22/Summer	SE3100 Fundamentals of Systems Engineering	SE3050 Intro to Digital Engineering & MBSE
2	AY23/Fall	SI3400 Fundamentals of Engineering Project Mgmt	OS3111 Probs & Stats for Human Systems Integration
3	AY23/Winter	SE3302 Systems Suitability	SE3011 Engineering Economics & Cost Estimation
4	AY23/Spring	SE4012 Mgmt of Advances Systems Engineering	OS3401 Human Factors in Systems Design
5	AY23/Summer	SE3910 System Evolution & Tech Assessment	SE4353 Risk Analysis & Mgmt of Engineering Systems
6	AY24/Fall	SE4420 M&S in Acquisition	SEM Focused Course
7	AY24/Winter	SE4980 Enterprise Systems	SE3211 Systems Engineering Management Capstone I
8	AY24/Spring	SE4503 Technology Planning and Replacement	SE3212 Systems Engineering Management Capstone II

Course Lineup

SE Certificate Course	SE Core Course	SE Domain Focus	SE Capstone Project

Application Deadline: 28 March 2022

Tier I

Systems Engineering Certificate with Advanced Systems Engineering Focus
Commencing on Tuesday, 5 July 2022
Program Delivered via Distance Learning
Sponsor Code: Open Enrollment (282-224O/P)

	Course Lineup	
Qtr	Year/Quarter	Course Title
1	AY22/Summer	SE3100 Fundamentals of Systems Engineering (3-2)
2	AY23/Fall	SI3400 Fundamentals of Engineering Project Management (3-2)
3	AY23/Winter	SE3302 Systems Suitability (3-2)
4	AY23/Spring	SE4012 Management of Advanced Systems Engineering (3-0)

Application Deadline: 28 March 2022

Tier II

**Systems Capability and Design Certificate
Commencing Thursday, 7 July 2022**
Program Delivered via Distance Learning
Sponsor Code: OPEN Enrollment (131-224O)

		Course Lineup
Qtr	**Year/Quarter**	**Course Title**
1	AY22/Summer	OS3180 Probability and Statistics for Systems Engineering (4-1)
2	AY23/Fall	SE3250 Capability Engineering (3-2)
3	AY23/Winter	SE3011 Engineering Economics and Cost Estimation (3-0)
4	AY23/Spring	SE4150 System Architecture and Design (3-2)

Application Deadline: 28 March 2022

Tier II

Systems Integrated Development Certificate
Commencing Friday, 6 July 2022
Program Delivered via Distance Learning
Sponsor Code: OPEN Enrollment (171-224P)

	Course Lineup	
Qtr	**Year/Quarter**	**Course Title**
1	AY22/Summer	SE3050 Introduction to Digital Engineering with Model-Based Systems Engineering (3-2)
2	AY23/Fall	OS3111 Probability and Statistics for Human Systems Integration (4-0)
3	AY23/Winter	SE3011 Engineering Economics and Cost Estimation (3-0)
4	AY23/Spring	OS3401 Human Factors in Systems Design (3-1)

Application Deadline: 28 March 2022

Tier III

Certificate in Systems Test and Evaluation
Commencing Tuesday, 5 July 2022
Program Delivered via Distance Learning
Sponsor Code: OPEN Enrollment (135-224O)

	Course Lineup	
Quarter	Year/Quarter	Course Title
1	AY22/Summer	OS3401 Human Factors in System Design (3-1)
2	AY23/Fall	SE4003 Systems Software Engineering (3-2)
3	AY23/Winter	SE4353 Risk Analysis and Management for Engineering Systems (3-2)
4	AY23/Spring	SE4354 Systems Verification and Validation (4-0)

Prerequisite: SE certificate (282) or equivalent

Application Deadline: 28 March 2022

130 Certificate Curriculum – Spring 2022

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Tier IV

Systems Engineering Capstone Certificate
Commencing Thursday, 7 July 2022
Program Delivered via Distance Learning
Sponsor Code: OPEN Enrollment (130-224O)

	Course Lineup	
Qtr	**Year/Quarter**	**Course Title**
1	AY22/Summer	SE4151 Systems Development & Integration (3-2)
2	AY23/Fall	SE3201 Engineering Systems Conceptualization (2-4)
3	AY23/Winter	SE3202 Engineering Systems Design (2-4)
4	AY23/Spring	SE3203 Engineering Systems Implementation & Operations (2-4)

Application Deadline: 28 March 2022

- **Degree Programs**
  - **311-231G/O** – Master's Degree in Systems Engineering with a focus on System of Systems Engineering or Systems Program Management
  - **721 -231P** - Joint Executive Systems Engineering Management (SEM) Master's Degree
  - **722-231P** - Systems & Program Management Master's Degree

- **Certificate Programs**
  - **282-231O** - Systems Engineering Certificate with Systems Software Engineering Focus
  - **131-231O** - Systems Capability and Design Certificate
  - **132-231G/O** – Systems of Systems Engineering Certificate
  - **173-231P** – Systems Program Management Certificate
  - **130-231O** - Systems Engineering Capstone Certificate

Fall Application Deadline: 5 July 2022
Fall Classes Commence during the Week of
26 September 2022

Open enrollment rate: AY21 open enrollment tuition rate is $2500 per student per course w/o books. If NPS is expected to provide books then add $200 fixed fee per course for the duration of program. Tuition rate applies to all SE certificate, master's degree and PhD programs. Tuition is required for any student enrolled in a course as of the first day of class.

Full sponsorship tiered fixed-price rate: Two tiered fixed-price options are offered to sponsors who make significant enrollment commitments. These options are offered as a result of reduced direct and variable costs associated with the commitments.

Cohort Pricing: The rate is $2000 per course w/o books. Organization commits to sponsor and fund an entire cohort of a minimum of 25 seats (not to exceed 30 per cohort) in a DL program and agrees to assume student attrition below the fixed-price floor of $50K. It is recommended that commands start with more than 25 students to minimize impacts of student attrition. If student enrollment drops to 24 or below, the price remains fixed at $50K per course for the cohort for duration of the program.

Partner Pricing: The rate is $2000 per course w/o books. Organization commits to sponsor and fund 50 or more seats across all DL programs. It is recommended that commands closely monitor the overall quarterly enrollment numbers to keep them at or above 50 seats. Should the student enrollment drop to 49 or below in any particular quarter, tuition will be fixed at the 50 seat rate. The command can then opt to revert back to open enrollment pricing or sponsor additional DL students in upcoming programs.

Short Courses: Various 1-3 day SE subject short courses are available not for graduate credit. The fixed price with book or handouts for 1-day is $15K, 2-day is $25K and 3-day is $30K for up to 25 seats. **Special arrangements:** NPS prides itself on being responsive to the needs of the Department of Defense. Any organization requesting additional program features or other special arrangements should contact the Associate Chair DPO to negotiate pricing.

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  - 831-402-6086
- Dep Assoc Chair MOE: Warren Vaneman - wvaneman@nps.edu
  - Distance Learning, Program Manager
  - 571-364-5126
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  - Academic administrative support for students and sponsors
  - 831-915-9581
- GEAC Student Support: - GEACStudCoord@nps.edu
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  - 831-656-3579

What to Expect from Us: Availability, Help, Advice, Action

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