

FY15-17 EDUCATIONAL SKILL REQUIREMENTS (ESRs)
Systems Analysis (SA)
Subspecialty 3210
Curriculum 363

1. Curriculum Number: 363
2. Curriculum taught at Naval Postgraduate School.
3. Students are fully funded.
4. Curriculum Length in months: 24 months
5. Academic Profile Code required: 335
6. The officer must understand the fundamental concepts and be familiar with the basic functional areas of Systems Analysis within the Department of Navy (DoN) and the Department of Defense (DoD) including:
 - a. BASICS (ESR #1): The graduate will possess the mathematical skills required to support graduate study in systems analysis.
 - b. UNCERTAINTY FUNDAMENTALS (ESR #2): The graduate will possess the mathematical skills required to support graduate study in systems analysis.
 - c. SIMULATION (ESR #3): The graduate will be able to construct and utilize Monte Carlo simulations of combat and other processes that evolve in time, and will be able to deal with statistical issues associated with the need for replication.
 - d. TACTICAL ANALYSIS (ESR #4): The graduate will be able to apply operations analysis methods to tactical and operational problems including tactical decision analysis, search and detection, and weapons effectiveness.
 - e. COST ANALYSIS (ESR #5): The graduate will understand the methods and practice of cost analysis including various cost models, with particular emphasis on the relationship of effectiveness models and measures to cost, and applications in cost-benefit analysis.
 - f. RISK BENEFIT ANALYSIS (ESR #6): The graduate will be able to apply the principles of probabilistic risk assessment in the context of systems analysis decision problems. This includes a

framework for balancing risks and benefits, and analysis under conditions of large financial and technological uncertainties.

g. OPTIMIZATION (ESR #7): The graduate will be able to formulate and solve a wide variety of optimization problems with particular emphasis on applications in optimum allocation of scarce resources and multi-year capital budgeting.

h. PRACTICE (ESR #8): The graduate will have gained experience in all aspects of analytical studies including review, critique, and oversight of the work of others; as well as participation in the conduct of an analytical study. Review, critique and oversight include the ability to highlight critical assumptions, recognize strengths and weaknesses of applied analytical methodologies, and evaluate study recommendations. Practice in the design and conduct of an analytical study includes the skills to formulate problems, use the analytical process to define study requirements, and apply appropriate analytical methodologies. Practice also includes demonstrating proficiency in presenting results both orally and in writing.

i. SYSTEM ANALYSIS CONTENT: The graduate will have completed an approved option sequence in Defense Resource Management, or another approved option sequence in a particular defense systems area in which systems analysis may be applied.

7. The officer must have the ability to use and understand Systems Analysis in problem solving and analysis efforts specifically as they relate to existing and proposed DoN/DoD systems and policies.

APPROVED:  _____ Date 5/7/15

APPROVED:  _____ Date 29 May 2015

APPROVED:  _____ Date 23 July 2015