

FY19-20 EDUCATIONAL SKILL REQUIREMENTS
Operations Research Analysis – Foundations of Modeling and Analysis
Subspecialty 3214

1. Curriculum Number: 355
2. Curriculum taught at Naval Postgraduate School.
3. Students are fully funded.
4. Curriculum Length in months: 18 months.
5. Academic Profile Code required: 335
6. The officer must understand the fundamental concepts and be familiar with the basic functional areas of Operations Analysis within the Department of Navy (DoN) and the Department of Defense (DoD) including the following ESRs:
 - a. FUNDAMENTALS (ESR #1): The graduate will possess the mathematical and computer programming skills required to support graduate study in operations research and have the ability to use computers to aid in analysis.
 - b. PROBABILITY, STATISTICS, AND DATA ANALYSIS (ESR #2): The graduate will be familiar with applications of probability, statistics, and data analysis to the modeling and analysis of decision problems.
 - c. OPTIMIZATION (ESR #3): The graduate will be able to formulate and solve several types of optimization problems, to include linear and integer programs.
 - d. STOCHASTIC MODELING (ESR #4): The graduate will be able to formulate basic stochastic models; calculate measures of performance for them; and be familiar with elementary applications of discrete-time Markov chains and homogeneous Poisson processes.
 - e. SIMULATION (ESR #5): The graduate will be able to employ simulation methods to formulate, implement, and explore simulations of real-world processes.
 - f. SYSTEMS ANALYSIS (ESR #6): The graduate will be able to apply systems analysis concepts as a basis for making key decisions, with particular emphasis in risk-benefit and cost-benefit analysis.
 - g. SPECIALIZATION IN AN ADVANCED OPERATIONS SEARCH DISCIPLINE (ESR #7): The graduate will attain advanced skills in at least two of the following disciplines: warfare analysis, manpower analysis, simulation modeling and analysis, optimization, and statistics.

Enclosure (4)

Graduate will be able to formulate and solve a wide variety of advanced problems in their chosen specializations and will be well versed in a broad range of advanced applications in the other disciplines.

h. PRACTICE (ESR #8): The graduate will have gained experience working on some aspects of an analytical study, and will demonstrate the ability to conduct analytical studies and demonstrate proficiency in presenting the results both orally and in writing. This includes the completion of a thesis, which must be aligned to one of the chosen specializations.

7. The officer must have the ability to apply operations analysis principles as well as knowledge from the relevant sciences to the development and implementation of effective policies throughout DoN and DoD.

8. The officer must be able to analyze the strengths and weaknesses of new policy proposals and suggest alternatives, which recognize the potential impact on DoD/DoN programs and objectives.

9. The officer must understand and be able to apply a range of quantitative techniques (e.g. stochastic modeling) to the analysis and study of DoN/DoD issues.

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

11. The officer must be capable of understanding and evaluating the utility of the operations analysis currently employed by DoN/DoD.

12. Major Area Sponsor and Subject Matter Experts

a. Major Area Sponsor: [REDACTED] Deputy Chief of Naval Operations, Integration of Capabilities and Resources (OPNAV N8).

b. Subject Matter Expert: [REDACTED] Director, Assessment Division (N81).

APPROVED:

[REDACTED]
Major Area Sponsor *DD*

16 April 2020
Date

APPROVED:

[REDACTED]
President, NPS

Date

20 July 2020

APPROVED:

[REDACTED]
Director, OPNAV N71

Date

3 Aug 2020