FY19-21 CORE SKILL REQUIREMENTS (CSRs)
SYSTEMS ENGINEERING
5801P, 5802P, 5803P, 5804P
Curriculum 580

Billet subspecialty coding is to be based on the minimum education/training/experience level required for optimum performance. Systems Engineering/5800P subspecialty coding is justified when, in addition to the general criteria stated in NAVPERS 15839 series (Manual of Navy Officer Manpower and Personnel Classification) Part B, the following specific criteria are satisfied:

1. Description of CSR Competencies. In order to achieve the goals for the SE masters programs, the outcomes are to produce graduates who:

a. **CSR-1:** Demonstrate the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context. This includes the ability to apply knowledge of mathematics, science and engineering to identify, formulate, and solve operational, technical, and engineering problems in systems engineering and related disciplines using the techniques, skills, and modern engineering tools necessary for engineering 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.

b. **CSR-2:** Demonstrate an ability to design a system, component, or process to meet desired needs incorporating appropriate engineering standards within multiple realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and lifecycle sustainability. Demonstrate proficiency in the application of systems engineering methods and processes, including: systems thinking, stakeholder needs analysis, concept of operations, requirements definition and analysis, functional analysis and allocation, human systems integration, design, architecture, lifecycle support, lifecycle cost, systems assessment, trade-off, selection, and test and evaluation.

c. **CSR-3:** Demonstrate proficiency in core skills of systems analysis. Core skills in this area include: design and performance of experiments; analysis and interpretation of data; understanding of optimization, decision analysis, risk analysis, economic modeling, and lifecycle supportability analysis. This analysis should include familiarity with combat simulations and combat modeling.

d. **CSR-4:** Demonstrate an ability to function on multidisciplinary teams working as a team member or leader in an authentic systems engineering project through both individual and team level contributions. Demonstrate proficiency in interpersonal skills and communications. Demonstrate competence in the planning and management of authentic systems engineering projects.

e. **CSR-5:** Demonstrate an ability to communicate effectively through written and oral presentation of technical material.

f. **CSR-6:** Demonstrate an understanding of professional and ethical responsibility.

g. **CSR-7:** Demonstrate recognition of, the need for, and an ability to engage in, life-long learning and knowledge of contemporary issues.

2. Applicable Officer Designators:
111X / 112X / 130X / 114X / 115X / 116X / 117X / 118X / 119X / 13XX / 14XX / 15XX

3. Applicable Billet Designator:

111X / 112X / 130X/ 114X / 13XX / 14XX

4. Educational and Significant Experience Criteria: Coded billets are authorized when the functions of the billet include the CSR competencies listed above (in paragraph 1). For additional clarification regarding definition of suffixes, refer to the NAVPERS 15839I, Vol 1.

a. Subspecialty Code Suffixes Authorized.

580X Subspecialty Code Suffixes Authorized				
Billet	**Officer**	**Suffix**	**Definition**	**Notes**
X	X	C	Proven Doctor of Philosophy	1a
X	X	D	Doctor of Philosophy	1
	X	F	Proven Master's Degree that does not meet all ESRs	2a
	X	G	Master's Degree that does not meet all ESRs	2
X		H	Master's Degree desired, not required	3
	X	I	Immediate Graduate Education Program (IGEP)	4
	X	L	Certificate degree at the Master's level	5
X	X	P	Master's Degree in approved Navy subspecialty	6
X	X	Q	Proven Master's Degree	6a
X	X	R	Proven Significant Experience	7a
X	X	S	Significant Experience obtained through OJT	7

Note 1: D-coded billets are authorized when the billet's primary duties require the CSRs, ESRs and a Doctorate Degree in Systems Engineering. D-coded officers are authorized when they complete a Systems Engineering Doctorate Degree at NPS or another accredited institution.

Note 1a: C-coded billets are authorized when the billet's primary duties require expertise in Systems Engineering where a doctorate level of knowledge is essential for optimum performance; and professional experience and proven performance are required. A D-coded officer can be upgraded to a C-coded officer when they have completed at least 18 months in a D-coded billet. Officer must have a D code prior to C coded tour.

Note 2: G-coded officers are authorized when:

(1) An officer has not completed all required ESR's (i.e.: not completed a Thesis).

(2) An officer attends a civilian institution and completes two thirds or greater of the ESRs as determined by the Subject Matter Expert.

Note 2a: F-coded officers are justified when an officer has a G code and completes a tour in a Master's degree billet or higher.

Note 3: H-coded billets are authorized when a billet requires expertise in Systems Engineering where a master's level of knowledge is desirable but not essential for optimum performance.

Note 4: I-coded officers are authorized when an officer completes a Master's degree awarded through the Intermediate Graduate Education Program (IGEP) at an approved institution, and they do not fully meet P-code requirements. Officer will maintain I code even after tour in an S, R, P, Q, H coded billet.

Note 5: L-coded officers are authorized when they complete the SE certificate. N-coded and M-coded billets and officers are not authorized.

Note 6: P-coded billets are authorized when the billet's primary duties require expertise of the CSRs and ESRs. P-coded officers are authorized when the officer completes all of the Systems Engineering (580) curriculum ESRs, and is awarded an approved Master's degree associated with the curriculum. (NOTE: When thesis is completed, student must apply to the NPS registrar for a new transcript which should be forwarded to PERS-43 to update the Officer Master File.)

Note 6a: Q-coded billets are authorized when the billet requires all the requirements of the P-code, and professional experience and proven performance are required. Q-coded officers are authorized when they have a P-code and then complete at least 18-months in a master's degree coded billet or higher (P, Q, C, D). G-coded officers cannot obtain Q-codes.

Note 7: S-coded billets are authorized when two of the following conditions are met:

(1) The duties required detailed knowledge of, or experience in specific Systems Engineering systems, processes, design, acquisition, management or leadership.

(2) Appropriate training on specific systems, processes, design, acquisition, and management is available and accessible to qualified officers prior to assignment of billets.

S-coded officers are authorized when the officer has filled an B, H, S, R, Q, or P-coded billet for more than 18 months AND have no Subspecialty code in this field. Their FITREP must justify that they have accomplished tasks indicated above for more than 18 continuous months.

Note 7a: R-coded billets are authorized when, in addition to the requirement for S-coded billets, the billet must be filled by officers having filled a previous 5800-coded billet. A requirement for familiarity or experience in the specific duties, as though service in a previous billet, should characterize these billets. R-coded officers are authorized when the officer has filled an R, Q, or P-coded billet for more than 18 months AND have no Subspecialty code in this field. Their FITREP must justify that they have accomplished tasks indicated above for more than 18 continuous months.

5. Curriculum Sponsor and Subject Matter Experts:

Sponsor: VADM Johnny Wolfe, Director, Strategic Systems Programs

Subject Matter Expert: CDR William (Bill) Harley, Strategic Systems Programs, William.Harley@ssp.navy.mil

APPROVED: _____ 27 NOV 18
Curriculum Sponsor [DATE]

APPROVED: _____ 4 FEB 2019
Director, OPNAV N12 [DATE]