2017-19 CORE SKILL REQUIREMENTS
NAVAL CONSTRUCTION AND ENGINEERING
SUBSPECIALTY 510x
CURRICULUM 510

The Naval Construction and Engineering subspecialty code (510X) will identify an officer with a broad, graduate level technical education in Naval Construction and Engineering. The officer will have an in-depth understanding of total ship engineering and supporting fields such as hydrodynamics, structural mechanics, and materials. Specific capabilities and requirements include the following:

- The ability to formulate and solve engineering and technical problems. Competence in research, design, development, procurement, and maintenance of large-scale ship systems and ships. Ability to prepare and present technical briefings, project plans, and reports.

- The ability to use techniques, skills, and modern engineering tools for naval engineering practice, including the ability to analyze and interpret relevant data.

- The ability to apply knowledge acquired in academic disciplines specifically to the concept formulation, design, acquisition, construction/modernization, maintenance, and industrial support of large-scale ship systems and ships.

Billet subspecialty coding is to be based on the minimum education/training/experience level required for optimum performance. Naval Construction and Engineering (510x) subspecialty codes are 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. Subspecialty Coding Restrictions

   Billets assigned to: Restricted Line Officers.

2. Applicable Officer Designator:

   14xx

3. Applicable Billet Designator:

14xx

4. Significant Experience Criteria:

a. Naval Construction and Engineering (510x) S-coded billets are not justified.

b. Naval Construction and Engineering (510x) S-coded officers are authorized when:

(1) The officer has no other 510x subspecialty code AND

(2) The officer has served at least 18 months in a 510xP or higher coded billet.

c. Naval Construction and Engineering (510x) R-coded billets are not justified.

d. Naval Construction and Engineering (510x) R-coded officer are not authorized.

5. Baccalaureate Criteria:

a. Naval Construction and Engineering (510x) E-coded billets are not justified.

b. Naval Construction and Engineering (510x) E-coded officers are not authorized.

6. Elective Level Criteria:

a. Naval Construction and Engineering (510x) H-coded billets are justified when the billet's primary duties require expertise in Naval Construction and Engineering, and a Master's degree level of knowledge is desirable but not essential.

b. Naval Construction and Engineering (510x) H-coded officers are not authorized.

7. Functional Education Criteria:

a. Naval Construction and Engineering (510x) F-coded billets are not justified.

b. Naval Construction and Engineering (510x) F-coded officers are authorized when:

(1) The officer has a 510xF code AND

(2) The officer has served at least 18 months in a 510xP or higher coded billet.

c. Naval Construction and Engineering (510x) G-coded billets are not justified.

d. Naval Construction and Engineering (510x) G-coded officers are authorized when:

(1) The officer satisfies all Naval Construction and Engineering 510xP ESRs with the exception of a relevant Master's thesis, OR

(2) The officer has completed a relevant Master's thesis and satisfies all but three or fewer Naval Construction and Engineering (510xP) ESRs.

8. Master's Criteria:

a. Naval Construction and Engineering (510x) P-coded billets are justified when the billet's primary duties require expertise in Naval Construction and Engineering at a Master's degree level of knowledge.

b. Naval Construction and Engineering (510x) P-coded officers are authorized when the officer satisfies all Naval Construction and Engineering (510xP) ESRs, including a relevant Master's thesis. The P code will not be given if thesis is not completed; in that case the officer would receive the F code. Utilization and obligations are still required in either case. If thesis is eventually completed, student must obtain an updated official transcript and forward to PERS-43.

c. Naval Construction and Engineering (510x) Q-coded billets are justified when the billet's primary duties require expertise in Naval Construction and Engineering at a Master's degree level of knowledge AND work experience in Naval Construction and Engineering-related systems, processes, design, acquisition, management or leadership.

d. Naval Construction and Engineering (510x) Q-coded officers are authorized when:

(1) The officer has a 510xP code AND

(2) The officer serves at least 18 months in a 510xP or higher coded billet.

9. Post-Master's (Engineer) Criteria:

a. Naval Construction and Engineering (510x) N-coded billets are justified when the billet's primary duties require expertise in Naval Construction and Engineering at an Engineer degree level of knowledge.

b. Naval Construction and Engineering (510x) N-coded officers are authorized when the officer satisfies all Naval Construction and Engineering (510xN) ESRs, including a relevant Engineer thesis.

c. Naval Construction and Engineering (510x) M-coded billets are justified when the billet's primary duties require expertise in Naval Construction and Engineering at an Engineer degree level of knowledge AND work experience in Naval Construction and Engineering-related systems, processes, design, acquisition, management or leadership.

d. Naval Construction and Engineering (510x) M-coded officers are authorized when:

(1) The officer has a 510xN code AND

(2) The officer serves at least 18 months in a 510xN or higher coded billet.

e. NOTE: The academic requirements for an Engineer thesis/degree exceed those of a Master's thesis/degree in scope and depth. The MIT Naval Engineer degree requirements will be used as the standard for comparison.

10. Doctorate Criteria:

a. Naval Construction and Engineering (510x) D-coded billets are justified when the billet requires detailed knowledge of Naval Construction and Engineering at the PhD level.

b. Naval Construction and Engineering (510x) D-coded officers are authorized when:

(1) The officer has a 510xN code AND

(2) The officer is awarded a PhD from an accredited institution in a research area related to Naval Construction and Engineering.

c. Naval Construction and Engineering (510x) C-coded billets are justified when the billet's primary duties require expertise in Naval Construction and Engineering at the PhD level AND work experience in Naval Construction and Engineering-related systems, processes, design, acquisition, management or leadership.

d. Naval Construction and Engineering (510x) C-coded officers are authorized when:

(1) The officer has a 510xD code AND

(2) The officer serves at least 18 months in a 510xD or higher coded billet.

11. Subspecialty Code Suffixes Authorized. Authorized suffixes should be annotated "X" for yes; unauthorized suffixes should be left blank. If any additional clarification is required for the code, annotate 1, 2, etc., in the notes column and add a Note below the table.

Subspecialty Code Suffixes Authorized				
Billet	**Officer**	**Suffix**	**Definition**	**Notes**
X	X	C	Proven Doctor of Philosophy	
X	X	D	Doctor of Philosophy	
	X	F	Proven Master's Degree that does not meet all ESRs	
	X	G	Master's Degree that does not meet all ESRs	
X		H	Master's Degree desired, not required	
		L	Certificate degree at the Master's level	
X	X	M	Proven Post Master's Degree graduate education	
X	X	N	Post Master's Degree graduate education	
X	X	P	Master's Degree in approved Navy subspecialty	
X	X	Q	Proven Master's Degree	
		R	Proven Significant Experience	
	X	S	Significant Experience obtained through OJT	

12. Community Manager and the Budget Submitting Office has agreed to allow billets to be coded for Naval Construction and Engineering (510x) and officers to be educated for this Curriculum.

[redacted]
Engineering Duty Officer Plans and Policies (NAVSEA 00T1)
Approval date: 07 May 2015

13. Sponsor and Subject Matter Expert:

Sponsor: [redacted]
Program Executive Officer for Carriers

Subject Matter Expert: [redacted]
Engineering Duty Officer Plans and Policies (NAVSEA 00T1)

APPROVED: [redacted]
Major Area Sponsor — 05 MAY 2017 — Date

APPROVED: [redacted]
Director, TFOE (OPNAV N12) — 24 July 2017 — Date