

MIT Naval Construction and Engineering (Course 2N) Admission Information for Naval Officers

The primary purpose of MIT's Naval Construction and Engineering program (2N) is to grow U.S. and foreign navy technical leaders, providing them with both breadth and depth in their technical studies as well as providing a path for a non-naval officer to grow in their understanding of naval architecture and ship design. The program gives the student insight into ship and submarine design, engineering, acquisition, construction, maintenance, modernization, and repair. The 2N curriculum is platform-focused, including HM&E systems and mission systems integration. The content of the program is built to satisfy the U.S. Navy's 510X subspecialty code (Naval Architecture). The 2N program is a three-year program, designed to have students complete a Naval Engineer's degree. More details on the program can be found at http://meche.mit.edu/sites/default/files/MechE_Grad_Guide.pdf. US Navy officers will also be required to meet the education US Navy's Education Skill Requires (ESR) for their program. The 2N program is flexible enough that most students choose to receive a 2nd master's degree in a course of study of their choosing. Some career paths (usually senior O4s or EDO-Ns) may only allow students two years for their course of study. In these cases, students will instead complete a 2-year Master of Science in Naval Architecture and Marine Engineering. Two-year students will meet a reduced ESR requirement and have more limited options for a second degree if they choose to pursue one. Check out the 2N website at <https://2n.mit.edu/> for more info. If your career and academic interests lie outside of ship design and naval architecture, then the Naval Postgraduate School offers many other programs and subspecialty codes and hosts many Engineering Duty Officers every year.

The 2N curriculum is geared towards U.S. and foreign naval and Coast Guard officers but is open to anyone. The US Navy ESR and subspecialty code (P-code) requirements for U.S. Navy Engineering Duty Officers far exceed the MIT degree requirements. More info will be provided to students on the curriculum upon admission to MIT.

There are three key milestones on the path to the Naval Construction and Engineering (Course 2N) program at MIT for Engineering Duty Officers are:

1. Acceptance into the ED Community or be an 1120 ED option and intend to execute your option following your DH tour
 - a. See below for notes on the timing of lateral transfer and exercise of ED option
2. Acceptance to the Mechanical Engineering Department (Course 2) at MIT
 - a. Acceptance by MIT does not guarantee you a billet/funding from the 2N program
 - b. Deferring your acceptance for 1 year is currently allowed by MIT policy. This does not guarantee you funding, and this must be carefully coordinated with 2N faculty and the ED detailers.
 - c. Note: the GRE is ALWAYS required to be accepted into the 2N program, even when MIT is not using it to evaluate applicants. If you desire to petition to not take the GRE based on access or other issues, contact the 2N faculty.
3. Securing one of the 2N billets available each year (for USN officers)
 - a. 2N faculty work with the detailer to allocate billets from the pool of accepted students
 - b. The 2N program fully funds billeted students
 - c. Currently there are nine billets for 2N and one billet for a course 22 (Nuclear) candidate; if not filled the course 22 funding may be offered to a tenth 2N student who will be on 2-year orders. Acceptance by MIT does not guarantee funding by the ED community. If interested in applying to course 22, always also apply to Course 2.
4. Most foreign Navy Officers are funded by their Navy.
5. USCG officers typically need sponsorship from MIT faculty to cover funding.
6. If you need help with funding, please contact the 2N faculty.

USN officers may apply to MIT prior to becoming an ED (anyone is always welcome to apply to MIT!). However, officers will not get orders from the ED community to go to MIT until a lateral transfer occurs or an ED option is exercised. If you are not an Engineering Duty Officer, but an officer of a different community and interested in the 2N program, please contact the 2N faculty.

The MIT application deadline is usually in early December, and the November lateral transfer board results are usually released in late December or early January.

Notification of admission and subsequent detailing to MIT will occur in early February. The 2N program begins in late May, so your PRD may have to be adjusted for a May arrival. Failure to carefully coordinate all of these with 2N faculty and both your losing command and the ED detailers may result in loss of funding. **COMMUNICATE EARLY AND OFTEN!**

The application to the Mechanical Engineering Department at MIT is completed online. The application usually is available by September 15th and must be completed by early December (it varies year to year—usually either the 1st or 15th of the month—be sure you know which it is.) Paper applications are not accepted. Useful application links:

Mechanical Engineering Department Admissions instructions: <http://meche.mit.edu/education/prospective-students/graduate/apply>

The following are application best practices and pitfalls. The best practices are not minimum criteria and are provided to help you maximize your chance at admission. The pitfalls are not disqualifiers but are to be avoided if possible. Remember if you don't apply you absolutely will not be admitted! If you are interested in coming then you **must** apply! Give it your best shot, and coordinate with the 2N faculty, specifically the Academic Officer (AO). Be sure to leave yourself time to prepare for the GRE and retake it if needed. If you want some feedback prior to applying, send your undergraduate school/degree/GPA and GRE scores to the 2N Academic Officer.

MIT 2N Application Best Practices (i.e., the “ideal” application does all of these)

1. MIT always assesses the whole person. Everyone has a story. Your job in your application is to tell your story to the admissions committee. The most important parts are quantifiable data: GPA, undergraduate degree, GRE scores, particularly the quantitative section, and hard breakouts in letters of recommendation (#1 of more than 100 officers I have worked with).
2. Make sure you can demonstrate that you have the academic ability to cut it at MIT. If you did poorly in an area, try to demonstrate that you have the ability through other means.
 - a. If you didn't have a great undergraduate GPA
 - i. Break out your technical, engineering, or in major GPA (if engineering or hard science) to show that you excel in technical courses
 - ii. Study and do well on the GRE. Be prepared to take it multiple times. Pay particular attention to the quantitative section
 - ii. Show that you broke out academically in Navy schools (Nuclear Power school, SWOS, etc).
 - iii. Take a community college course to show that you can succeed in the foundational courses especially calculus.
 - b. If you did not major in a technical area
 - i. Demonstrate through your personal statement and letters of recommendation how you are prepared to complete a course of study at the world's premier technical university in the Mechanical Engineering department

- ii. Break out your technical courses, even if it's just physics and calculus
 - iii. Do well in the GRE particularly in the quantitative section.
- c. MIT is a research university. Anything you can do to show you are prepared to do technical research is helpful. Describing a technical senior project is better than not putting anything in your application.
- 3. Three concise, well-written and current recommendation letters
 - a. Hard break outs help
 - b. You must have 3 letters. If you only submit two, your application will be incomplete and never make it to admissions.
 - c. At least one letter must be from academia. Professors that oversaw research are excellent, but any faculty letter will do. Explicitly ranking you higher than most of your peers and commenting on your ability to conduct research and succeed at MIT is a best practice.
 - d. At least one from your Navy chain-of-command that explicitly comments on your surety of success at MIT (your drive/dedication/work ethic/performance/etc.) and your outstanding performance and the confidence you have inspired with your performance of duties. Hard break outs matter. Not having a letter from your current chain of command invites a lot of questions.
 - e. The third letter is preferred to be from academia, but there is flexibility here especially for those who have been out of school for some time.
 - f. Specific comments on undergraduate or other research projects you have completed should show up in as many letters as make sense for the authors.
- 4. Concise, well-written personal statement that stands out by providing a detailed and specific account of an event/project that gives the reader insight into (some or all of) the applicant's
 - a. ability to succeed academically
 - b. research interests
 - c. personal motivations
 - d. other broadening factors (community service, foreign travel/study, internships)
- 5. Complete application including letters of reference and GRE scores submitted by the deadline are a **MUST**
- 6. Communication with 2N Academic Officer (AO) well prior to application deadline
 - a. This helps to ensure your application is complete and routed through the MIT admissions process smoothly and correctly.
 - b. If you have communicated to the AO ahead of time and your package does not make it to admissions, the academic officer will go find it. If you have not communicated, you will not be evaluated for admissions and never get any feedback. Don't let this happen to you.
 - c. Failure to do this has resulted in mismarked applications being rejected by departments and programs other than 2N without the Navy even knowing; the 2N faculty are your strongest advocates and your most likely path to acceptance and billeting!

MIT 2N Application Practices to Avoid (not disqualifiers)

1. Personal statement points out everything that is wrong with current navy ships/policies and indicates that the applicant will fix them once they have graduated from MIT.
2. Typos, misspellings, poor grammar. Have someone else read your statement. If English is not your primary language, have a native English speaker read it.

MIT Application Form Guidance

To get started, register for a MIT graduate application account, get a temporary pin and establish a new password. Acknowledge the guidelines and continue to the information pages.

1) Program Information:

- a) Program: Mechanical Engineering
- b) Degree Objective: Naval Engineer's Degree (3 year program) or Master's Degree (2 year program)
- c) Research Area of Interest: Ocean
- d) Subfield of Interest: Naval Engineering
- e) Additional Subfields: Your Choice

2) Personal Information: Self-explanatory. *Note:* Addresses: No FPO/APs.

3) Academic History: Colleges/Universities Attended

- a) Make sure what you report matches your transcript
- b) Official transcript not needed until after admittance, so you don't need to pay for official one initially, can use the (typically) free unofficial transcripts
- c) Make sure to check for PII (like SSN) and redact as necessary
- d) Grading system typically not needed or required as long as it is spelled out on the transcripts or is standard (4.0 scale with $\geq 90\%$ = A, etc...)

4) Test Scores / Employment / Experience / Honors, Awards & Pubs

- a) Take the General GRE as soon as possible. You are allowed to take it more than once, and we take your best score.
 - i.) You can be reimbursed by the Navy once for the test. See NPS's website for instructions.
<http://www.nps.edu/web/civins/student-information>
- b) Type the resume or attach it, but not both.
- c) Fill out honors, publications, and experience to the best of your ability
 - i) Remember that these are mostly academics that don't have deep knowledge of the armed forces, so acronyms and jobs need to be clear (like how LinkedIn or other services will provide translators between military jobs and civilian equivalents).
 - ii) Do not include all the citations for all your medals. Summarize them. Brevity is key.

5) Statement of Objectives / Video – Self-explanatory; don't just recount your Bio. 1-2 pages; < 1 min.

6) Recommendations (See also 2N info and Application Gouge document):

- a) MUST have three letters or package will likely never get evaluated
- b) One letter NEEDS to be from someone in your Academic background
- c) One letter from your existing chain of command is highly advised
- d) Make sure to address academic ability as much as possible instead of typical officer stuff that the general faculty here may not be able to translate into academic acumen

7) Additional Info: Self-explanatory.

8) Funding: 'US Navy' or For Foreign Students put '*Country Name* Navy'

Certify, Sign and Review!