SHIPBUILDING OPERATIONS AND TECHNOLOGY  
JUNE 13-17, 2022

LECTURER-IN-CHARGE: Dr. Philip Koenig, Director, Industrial and Economic Analysis Division, Naval Sea Systems Command, Washington, D.C.

TUITION: $2500

DAILY CLASS ROUTINE:

**Monday:** Classroom facility opens at 0730 and will be secured at 1700. Class begins at 0800 and ends at 1700 with a 1 hour break for lunch. Optional ice breaker at Muddy Charles after class.

**Tuesday:** Classroom facility opens at 0730 and will be secured at 1700. Class begins at 0800 and ends at 1700 with a 1 hour break for lunch.

**Wednesday:** Classroom facility opens at 0730 and will be secured at 1700. Class begins at 0800 and ends at 1700 with a 1 hour break for lunch.

**Thursday:** Field trip to General Dynamics Bath Iron Works. Bus departs from MIT at 0700 and returns at 1800. Lunch will be provided during the tour.

**Friday:** Classroom facility opens at 0730 and will be secured at 1200. Class begins at 0800 and ends at 1200.

COURSE DESCRIPTION AND OBJECTIVE: This course introduces students to the shipbuilding industry. It provides a basic understanding of how the industry works and what drives outcomes. The scope includes new construction and repair, naval and commercial, U.S. and overseas. Concepts and principles are accompanied by practical and up-to-date examples. Current directions and issues in the industry are discussed. Topics include:

- Shipbuilding production metrics
- Shipyard workflow
- Shipyard facilities and layout
- Steel fabrication and assembly technologies
- Production planning, scheduling, and control
- Information technology
- Advanced manufacturing
- Production economics and capital investment planning
- Global shipbuilding industry structure and competitiveness
- Ship repair

An all-day field trip to Bath Iron Works is planned for Thursday, June 18. Students will be guided by experienced shipyard personnel as they walk through a major shipbuilder’s physical value chain. The day begins at materials receipt, continues through the various stages of fabrication, assembly, and integration, to pier side outfitting. Our tour will include the Hardings Plant, the East Brunswick Manufacturing Facility,
and the main yard in Bath. At the conclusion of the tour, Bath Iron Works production managers will be available for a question-and-answer session. The tour and discussions are subject to the availability of Bath Iron Works personnel and restrictions on the disclosure of information imposed by the U.S. Government. Bus transportation will be provided to and from Cambridge. The class will return to Cambridge in the late afternoon.

**LECTURERS**

- **Dr. Philip Koenig**  
  Director, Industrial and Economic Analysis Division, NAVSEA
- **Mr. Patrick Cahill**  
  Independent Consultant, Cahill Consulting LLC
- **Mr. Albert Horsmon**  
  Horsmon & Associates Marine Consultants LLC
- **Dr. Jong-Gye Shin**  
  Professor, Department of Naval Architecture and Ocean Engineering, Seoul National University
- **Mr. Mark Spicknall**  
  Senior Consultant, First Marine International Ltd
- **Mr. Michael Stanton**  
  Director, Business Development, BAE Systems Ship Repair

**Bath Iron Works Tour**  
General Dynamics Bath Iron Works

**SPECIAL INSTRUCTIONS FOR BATH IRON WORKS TOUR:**

Bath Iron Works (BIW) is a heavy industrial environment and visitors are required to dress suitably. **Steel-toed work-boots and long-sleeve shirts are required.** Safety protection such as hats, eye protection, and hearing protection will be provided. Cameras, cell phones with and without cameras, and recording devices are prohibited. If circumstances require, this tour will be cancelled and additional lecture material will be substituted.

**GENERAL INFORMATION**

**LOCATION:** Classes will be held in the Hill Building, Building NE-80, Room 1409 at 1 Hampshire Street, Cambridge, MA. The classroom is adjacent to MIT's main campus at The Charles Stark Draper Laboratory. An interactive MIT campus map is available on-line at [http://whereis.mit.edu/](http://whereis.mit.edu/).

**COURSE ELIGIBILITY AND CLASSIFICATION:** This course is open to US Citizens only. Applicants are expected to have mature technical backgrounds which, either through experience or education is at least equivalent to graduate education. This course is UNCLASSIFIED. No visit request or security clearance is needed.

**APPLICATION AND TUITION PAYMENT:** Course enrollment is limited. Seats are reserved in order of receipt of complete applications with “confirmation of enrollment” upon receipt of payment or obligation of funding through your training coordinator (SF-182).

Note: If course demand is high, we reserve the right to release any unconfirmed enrollments in order to provide a wait-listed student an opportunity to attend. Nominally we will do so three weeks before course start date. However, we will make every effort to notify you beforehand and request your intentions.

Flexible payment options, including:
1) Wire transfer
2) Credit card (VISA, MasterCard, Discover Card, American Express)
3) Check

Please see detailed directions on our website for application and payment. Link on left side of the 2N course webpage http://2n.mit.edu/ or direct to link of http://naval-pro-summer.mit.edu/.

It is critical that you provide the name of your training coordinator and/or the person who will be making the tuition payment on your application as we must receive payment in order to hold your place in the course – without payment (or obligated funds via approved SF-182) we may need to release your seat to someone else on the wait list.

In advance of payment, a training officer approval (block 3b of SF182) obligating funds is accepted to confirm enrollment. Full payment is due MIT at least one week before course.

**CANCELLATION:** Cancellations within **ONE (1) week of the first day of the course** will be subject to a $100.00 charge. Substitution by another applicant will be allowed provided an application is received.

**ACCOMMODATIONS:** Course tuition **DOES NOT** include accommodations. Each student must arrange his or her own transportation and hotel accommodations. Hotel space in Cambridge is very limited during the summer, so early advance reservations are strongly recommended. We have reserved a small block of rooms at the government rate at a local hotel which is located a short walking distance from the MIT classroom and provides convenient access to the MBTA Red Line at the Kendall/MIT station. We will send you information about our hotel block when we confirm enrollment and payment (or obligated funds via approved SF-182) in the course. The hotel will release the hold on any unclaimed rooms **FOUR (4) weeks prior to the first day of the course.** Car rental is neither necessary nor recommended.

**STUDENT ATTIRE:** Business casual. **Steel toe shoes are required for the BIW field trip.**

**REFRESHMENTS:** Continental breakfast will be provided in the morning and a light snack each afternoon. Lunch will be provided on those days when working lunches/guest speakers are scheduled.

**POINT OF CONTACT/EMERGENCY CONTACT INFORMATION:** If you have any questions, or need to contact a student during class time in an emergency, please contact Naval Professional Summer Coordinator at 617-324-2237 or e-mail profsum@mit.edu.

**PORTABLE ELECTRONIC DEVICES:** You may bring any portable electronic devices with you into the classroom.