SURFACE SHIP COMBAT SYSTEM DESIGN AND INTEGRATION  
JUNE 6 – 10, 2022

LECTURERS-IN-CHARGE: CAPT Jeff Lock, PEO IWS 1.0F, AEGIS Fleet Readiness Major Program Manager and Dr. James Moreland, SES(Retired), Defense Consultant

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 catered lunch and a guest speaker.

Wednesday: Classroom facility opens at 0730 and will be secured at 1700. Class begins at 0800 and ends at 1700 with a catered lunch and a guest speaker.

Thursday: 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.

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

COURSE DESCRIPTION AND OBJECTIVE: The objective of this course is to provide the student with overall knowledge of surface ship combat systems and the major factors that impact their integration among themselves and aboard ship. The course will cover the impact of missions and threats as they relate to platform and system design considerations, and vice versa. Beginning with fundamental physics based equations, system design characteristics and performance of individual combat subsystems such as radar, electro-optical imaging, combat control, communications, electronic warfare, guns and missiles and launcher systems are addressed. The basic template of Detect, Control, Engage and Assess will be followed in each major warfare area with students being able to explore learning through a practical design problem. The following topics will be covered:

- Introduction and Overview of Combat System Architecture
- Missions and Requirements
- Architecture for Ships and Combat Systems
- Following warfare areas will be discussed: Surface and Land Attack, AAW (Aegis and non-Aegis) and Ballistic Missile Defense
- Integrating into Ship Architectures and Impact
- Integrated Topside Design
- Advanced Technologies
- Integration Challenges
LECTURERS

TBA PEO IWS 1.0F, AEGIS Fleet Readiness Major Program Manager
Dr. James Moreland Jr. Former OUSD(A&S), Acting DASD(TWS) & Director, Naval Warfare
CAPT (ret) Joseph Spitz Technical Warrant Holder for Topside Design, NAVSEA
Mr. Carey Filling Director, Surface Combatant & Mine Warfare Ships Engineering, NAVSEA

GUEST SPEAKERS

VADM Andy Lewis, USN Deputy Chief of Naval Operations for Operations, Plans and Strategy (OPNAV N3/N5)
RADM Doug Small, USN Naval Information Warfare Systems Command Vice Program Executive Officer, Integrated Warfare Systems
RDML Tom Druggan, USN Program Executive Officer, Aegis Ballistic Missile Defense, MDA

SPECIAL NOTE: This course contains material governed by Distribution Statement D. Distribution is authorized to Department of Defense and U.S. DoD contractors only. Other requests shall be referred to PEO Integrated Warfare Systems.

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/.

COURSE ELIGIBILITY AND CLASSIFICATION: Applicants are expected to have mature technical backgrounds which, either through experience or education is at least equivalent to graduate education. This course is classified SECRET/NORFORN. It is open to active-duty U.S. military, U.S. government employees, and U.S. civilian contractor personnel with U.S. government sponsorship. It is NOT open to foreign nationals. A SECRET security clearance is required. A current U.S. Government ID or current Passport will be required each day to obtain a badge for classroom access. Students with appropriate clearances that are outside of DoD must apply at least three weeks in advance to allow time for “need to know” to be established and approval received through appropriate channels.

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 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 to 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 and their security clearance is processed by Draper Laboratory.

**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 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. Students are advised to bring a sweatshirt or sweater in the event that the classroom is cold.

**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:** If you have any questions, please contact the Naval Professional Summer Coordinator at (617) 324-2237 or by e-mail to **profsum@mit.edu**.

**EMERGENCY CONTACT INFORMATION:** During class, students can be contacted by leaving a message with Mark Morgenstern at (617) 258-3431 or by e-mail to **mmorgenstern@draper.com**.

**PORTABLE ELECTRONIC DEVICES:** This course is **CLASSIFIED.** The classroom will be managed as a CLOSED AREA at all times during the period of instruction. Among other restrictions, this means that no recording devices or other electronic devices will be allowed into the room unless prior arrangements have been made. Such arrangements must be made at least three weeks prior to the first day of class. Personal electronic equipment must be left outside the classroom. The area will be guarded, but will **NOT** be locked. Please keep this in mind when deciding what to bring with you and what to leave in your hotel room. Examples of personal electronic equipment that are **NOT** allowed in the classroom: laptops, PDAs, iPods, calculators, wireless fitness trackers (such as Fitbit, Basis Peak, or Jawbone Up), cell phones, iWatches, cameras, and flash drive memory sticks. **NOTE** that this is not an all-inclusive list. If you have a Portable Electronic Device not listed here, do not hesitate to ask Draper Security prior to bringing the device inside the classroom.

If you require a medical assist electronic device, arrangements can be made to allow these in the classroom. Please contact Draper at (617) 258-3431 or **mmorgenstern@draper.com** at least three weeks prior to the first day of class.
VISIT REQUESTS: JPAS is the preferred method for passing visit requests. The JPAS SMO is 519934. Important information to include to prevent visit request being rejected: The (Reason for Visit) “Pro-Summer Course,” (POC) “Mark Morgenstern,” (POC Phone) “617-258-3431,” (visit access) “secret,” along with the specific dates of your course (NOT for an entire year), will be needed to process your JPAS visit. Visits should be processed at least five (5) working days prior to the start of your course to ensure adequate processing time.

If your clearance cannot be sent via JPAS, a Visit Authorization Letter (VAL) will need to be faxed to The Charles Stark Draper Laboratory, Inc.

NOTE: The VAL should be sent on your letterhead to include name, address and telephone number of the commercial or government entity (CAGE Code), certification of the level of the facility clearance, full name of course attendee, SSN, citizenship, date and place of birth, specific dates of visit for your course (NOT for an entire year), the purpose of the meeting (Pro-Summer Course), your Draper point of contact (Mark Morgenstern, 617-258-3431) and your clearance information. Please specify if you are a student or an instructor.

The Charles Stark Draper Laboratory, Inc.
555 Technology Square
Cambridge, MA 02139-3563
Attn: Rachel Malcolm, Room 1004
JPAS SMO: 519934
rmalcolm@draper.com
Tel: 617-258-1859
Fax: 617-258-2000

If you need to check on status of your visit request contact Draper’s Personal Security office at persec@draper.com 617-258-1844.