

# **N7 Engineering Academy Syllabus for MSC Regulatory Standards, Inspections, Maintenance Availability Overview, and Engineering Budgets**

## **Course Content**

This course provides an in-depth introduction to the commercial regulatory standards, inspection regimens, drydocking, availability planning, availability management, work item development, and work item cost estimating philosophy, policies, and business practices used by MSC. The subject matter is considered basic in nature. This course consists of the following modules:

- American Bureau of Shipping Vessel Classification
- U.S. Coast Guard Vessel Inspection and Certification
- MSC SMART Inspections
- MSC Onboard Condition Inspections
- MSC Work Item Development Overview
- MSC Work Item Cost Estimating Overview
- Weight Control and Ship's Stability
- Drydocking
- Government Contracting Overview
- MSC Availability Planning Overview
- MSC Availability Management Overview
- Federal Budget Process
- DOD Budget Process
- Funding MSC Operations
- MSC Engineering Budget Development
- MSC Engineering Budget Execution

## **Target Audience**

The target audience for this course is all new-hire N7 personnel. This course is also appropriate for experienced N7 personnel who want to refresh their proficiency in certain subject matter areas.

## **Pre-Requisites**

Completion of Introduction to Military Sealift Command

## **Administration**

Enrollment is on a first come, first served basis. You can self-register for this course online at <http://mscn7training.com>. Successful completion of this course requires 100% attendance.

## Schedule

This course is conducted over a period of three consecutive days. Classes begin at 8:00 AM and end at 5:00 PM each day. The schedule for the course modules is as follows:

Day One	0800-0830	Course Introduction
	0830-1200	American Bureau of Shipping Vessel Classification
	1300-1700	U.S. Coast Guard Vessel Inspection and Certification
Day Two	0800-0900	MSC SMART Inspections
	0900-1000	MSC Onboard Condition Inspections
	1000-1100	MSC Work Item Development Overview
	1100-1200	MSC Work Item Cost Estimating Overview
	1300-1400	Weight Control and Ship's Stability
	1400-1700	Drydocking
Day Three	0800-0900	Government Contracting Overview
	0900-1000	MSC Availability Planning Overview
	1000-1100	MSC Availability Management Overview
	1100-1200	Federal Budget Process
	1300-1400	DOD Budget Process
	1400-1500	Funding MSC Operations
	1500-1600	MSC Engineering Budget Development
	1600-1700	MSC Engineering Budget Execution

## Module Descriptions:

**American Bureau of Shipping Vessel Classification** - The topics covered in this module include: American Bureau of Shipping (ABS), International Association of Classification Societies, ABS Rules (structures, propulsion, electrical systems, automation, piping systems, firefighting systems, and materials and welding), classification process, vessel classification certificates, relationship between ABS and U.S. Coast Guard, ABS Type approval, ABS plan review process, surveys during construction, surveys after construction, ABS Eagle Survey Manager, and suspension or withdrawal of classification.

**U.S. Coast Guard Vessel Inspection and Certification** - The topics covered in this module include: U.S. Coast Guard (USCG) roles and responsibilities, Code of Federal Regulations, IMO Conventions (including SOLAS and MARPOL), USCG inspection regimen, Memorandum of Agreement Between MSC and USCG, Marine Safety Center plan approval, USCG type approval and Alternate Compliance Program.

**MSC SMART Inspections** - The topics covered in this module include: statutory inspection of naval ships, statutory inspection of MSC ships, and SMART inspection of MSC ships ineligible for COI.

**MSC Onboard Condition Inspections** - The topics covered in this module include: MSC contract technical requirements surveillance (CTRS) program, CTRS roles and responsibilities, onboard condition inspections (OCIs), shipyard monitoring (SM), findings and observations, and sample invoice validation.

**MSC Work Item Development Overview** - The topics covered in this module include: MSC's work item policies and practices; detailed, performance, and performance-like work items; MSC Work Item Preparation Guide; MSC standard work package index; MSC 000 work items; MSC class standard work items; Category A and B work items; and work item content considerations. This module is intended to provide a brief overview of these topics. A more in-depth examination of these topics will be provided in a subsequent course.

**MSC Work Item Cost Estimating Overview** - The topics covered in this module include: MSC's policies and practices for developing independent government cost estimates for performance-like work items; classification of cost estimates; cost estimating terminology; cost estimating process (definition, planning, data collection, analysis, estimate formulation, third party review, and estimate documentation); and engineering approach (bottom-up cost estimating approach). This module is intended to provide a brief overview of these topics. A more in-depth examination of these topic will be provided in a subsequent course.

**Drydocking:** The topics covered in this module include: types of drydocks, drydock evaluation, docking plans, docking calculations, blocking arrangements, docking conference, dock inspection, docking evolution (including positioning the ship, and inspecting block positions and hull condition after the dry dock is dry), monitoring block condition while ship is dry docked, monitoring weight changes (i.e., additions, removals, and changes in position) while ship is dry docked, monitoring temporary openings and closures while ship is dry docked, undocking conference, reviewing contractor's stability calculations prior to undocking, inspecting seachests and sea valves prior to undocking, monitoring compartments and tanks below the waterline while flooding the dry dock, and Docking Report (NAVSEA 9997/1-4).

**Weight Control and Ship's Stability:** The topics covered in this module include: weight control considerations associated with ship maintenance, repair, and alterations; impact of improper weight control on ship's stability; and the Cargomax stability and trim program used onboard MSC government-owned vessels.

**Government Contracting Overview** - The topics covered in this module include: what is a contract, commercial and federal contracting laws and regulations, federal contracting objectives, division of roles and responsibilities for government

contracting, MSC contracting authority, common MSC contract types, competition requirements for government contracts, and requirements for publicizing government contract actions. This module is intended to provide a brief overview of these topics. A more in-depth examination of these topic will be provided in a subsequent course.

**MSC Availability Planning Overview** - The topics covered in this module include: common types of MSC maintenance availabilities, availability planning, work package development, and ship's crew planning. This module is intended to provide a brief overview of these topics. A more in-depth examination of these topic will be provided in a subsequent course.

**MSC Availability Management Overview** - The topics covered in this module include: Overhaul Management Team, major phases of availability management (pre-availability activities, availability activities and post-availability activities), and availability management activities. This module is intended to provide a brief overview of these topics. A more in-depth examination of these topic will be provided in a subsequent course.

**Federal Budget Process:** The topics covered in this module include: federal budget, federal budget players, budget formulation schedule, budget enactment schedule, Antideficiency Act, continuing resolutions, and flow of spending authority.

**DOD Budget Process:** The topics covered in this module include: Planning, Programming, Budgeting, and Execution (PPBE) process (planning phase, programming phase, budgeting phase, and execution phase)

**Funding MSC Operations:** The topics covered in this module include: Navy Working Capital Funds, Transportation Working Capital Funds, and reimbursable support agreements.

**MSC Engineering Budget Development:** The topics covered in this module include: budgeting and performance management, budgeting as a strategic business process, Engineering budget development considerations, and M&R budget development considerations.

**MSC Engineering Budget Execution:** The topics covered in this module include: budget execution, accounting concepts associated with budget execution, budget execution challenges, budget execution reviews, Prompt Payment Act, invoice processing, and late payments.

Date	Version	Description	Author
4/29/19	0.0	Initial draft	Gary Fields

4/29/19	0.1	Revised agenda for days 3 and 4 to resolve instructor scheduling conflict	Gary Fields
5/3/19	0.2	Revised course name	Gary Fields
6/23/19	1.0	Revised curriculum and module durations to reflect three-day vice four-day schedule per discussion with MSC (AI Ronald)	Gary Fields
7/10/2019	1.1	Deleted PEVI and AVCERT from list of topics covered.	Gary Fields
8/14/2019	1.2	Revised course name, curriculum, module durations, and target audience per discussion with AI Ronald (MSC N7X Competency Manager)	Gary Fields
11/25/19	1.3	Revised Administration section	Gary Fields
2/13/20	1.4	Added Weight Control and Ship's Stability modules; Deleted Drydocking Overview module	Gary Fields
3/17/22	1.5	Added Course Introduction module to schedule. Deleted "aviation certification" from "Course Content" (refer to Rev 1.1 above). Corrected minor typos.	David Leyh