

**Massachusetts Maritime Academy
Department of Marine Transportation
DANGEROUS LIQUID CARGO
Course MT-3151**

Fall 2020

**Lecture Instructor: CDR McRae / Tankerman PIC
Office Hrs. M-W-F 1100-1200 via google meet**

Lab Instructors: Mate Burke / Tankerman PIC

cmcrae@maritime.edu

lburke@maritime.edu

**DLC Lecture: MWF 0800-0850 Section 01A-B Lecture Online/ tests in person
MWF 1000-1050 Section 02A-B Lecture Online /tests in person**

**DLC Labs: Tues 1200-1350 Section 01 Bresnahan 117
Tues 1400-1550 Section 02 Bresnahan 117
Wed 1200- 1350 Section 03 Bresnahan 117
Mon 0800-0950 Section 04 Bresnahan 117**

SCOPE

The Dangerous Liquid Cargo Course is designed to meet the STCW code regulations V/1 and V/2 as well as 46 CFR 10.910 and 46 Part 13 of the U.S. Code appropriate to the duties of Tankerman PIC. This course utilizes formal instruction, hands-on demonstrations and state of the art simulator training to provide students with experiences in liquid cargo handling that would otherwise demand years of seagoing experience.

COURSE LEARNING OBJECTIVES

The objective of this program of study is to familiarize the student with the loading, discharge and carriage of dangerous liquid cargoes. This program is designed to expose the student to the safety, firefighting, and pollution prevention and response issues related to the carriage of dangerous liquid cargoes

COURSE LEARNING OUTCOMES

The student will be able to recognize the important aspects of construction of tank vessels and their piping, pumping, inerting, ballasting, vapor control and tank washing systems. The student will demonstrate an ability to conduct simulated loading, discharging, ballasting, inert gas and tank washing operations. The student will be able to identify the characteristics, dangers, refining and distribution of petroleum products. The student will be able to recognize the safety, firefighting and pollution prevention and response issues related to the carriage of petroleum products by sea.

WEEKLY LEARNING OBJECTIVES

The expected learning outcome is that the trainee...

1. Explains tanker construction purpose and trade
2. Describes the exploration, refining and distribution of oil
3. Identifies tank layout and piping Systems
4. Demonstrates loading and discharging operations
- 5 Explains planning a load
6. Identifies safe ballast operations
7. Demonstrates tank cleaning operations
8. Describes Inert Gas and Crude Oil Wash Systems
9. Relates marine vapor control systems to vessel operations
10. Identifies the concepts behind tanker fire safety
11. Relates issues of oil in the environment to tanker safety
- 12.. Describes the duties of the 3rd and Chief Mates aboard a tank vessel

SPECIFIC COURSE OBJECTIVE

This course satisfies the training course requirements necessary for an endorsement as :

Tankerman-PIC

Tankerman PIC(Barge)

Tankerman -Assistant

Tankerman-Engineer

A grade of less than C- (70%) will not fulfill the USCG mandated STCW requirements for issuance of either a Third Mate Unlimited license or an STCW OICNW certificate. Demonstration of competencies relating to dangerous liquid cargo handling are also required for successful course completion.

PROCEDURE AND POLICY

- Attendance for each class is required. This is a STCW course.

- Disciplinary action and grade point reduction will be administered to policy offenders. **Unexcused absence from any lecture or lab will result in the individual being placed on report and a five point reduction in your FINAL average.**
- If absences occur due to illness, the student must notify the instructor as soon as possible for make-up work. If you are sick, have your shipmate bring in the binnacle list, or scan and email to me. The instructor must be informed of all special liberty requests well in advance of the respective date.
- Authorized absences must be reported to the instructor prior to the missed class. Plan ahead, and email me as soon as you know that you will need to miss a class.
- Make-up examinations for authorized absences will be scheduled for a mutually agreed upon time.
- All quizzes and examinations missed as a result of an unauthorized absence, will result in a **ZERO**.
- For each absence, you will need to set up a make-up meeting with me during my office hours to show that you have caught up with the class material.
- Any missed lab must be made up and it is your responsibility to meet with your lab instructor to arrange such make-up.
- Punctuality is an important requirement for attendance. You may be required to come for make-up meetings and may have marks deducted from the course grade if you are continuously are late.
- Cadets missing any combination of **five** or more lecture or lab hours will receive a **failing grade** for the course.
- Cadets are responsible for all reading assignments, classroom lectures, and assigned projects.

The grading matrix will be factored as follows

Lecture Quizzes:	40%
Lab Competency:	20%
Homework	10%
Group Presentation	10%

Final Exam

20%

Course materials will be handed out in Lab and via electronically via blackboard. This should be kept neatly in a three ring binder for present and future reference. Lectures will be posted to BLACKBOARD after presentation in class for your studying convenience. MMA Email will be used for class/lab changes or cancellations due to weather etc.

When meeting in person, (Example: Labs and meeting in person for Lecture quizzes) every cadet will observe Academy standards of personal appearance and conduct as specified by Academy regulations. This may include waiting for an instructor at least twenty minutes after the scheduled class start. Changes of Laboratory venue sometimes cause confusion. If so contact your lab instructor!

It is the students' responsibility to seek extra help whenever needed. I am available as shown at the top of this syllabus. Please do not hesitate to seek help.

USCG/ STCW approved DLC Syllabus

Textbook: TANKER OPERATIONS, Huber, 5th Edition, CMP
ISGOTT fifth ed. International Guide to Tankers and Terminals

Posted electronically via BB

All lecture, reading and oral report material is fair game for tests. All reading assignments are expected to be completed before class on the due date.

Attendance at all classes/ labs is mandatory. No eating, drinking or use of tobacco products is allowed in LAB. Any disclosure of learning disability must be made directly from the student to the instructor within the first two weeks of class. The Instructor will attempt to make any reasonable allowances.

Online structure format for Lecture:

1. Every Sunday I will send you an email in regards to the plan of the week. What you will be doing each day of class that MWF of that upcoming week. . . whether you watch a panopto video counted as your attendance, or we conduct a live class via google meet which will be counted as your attendance.
2. Assignments given will be posted on Blackboard, and you will complete them, scan then via HP scan as a PDF file with (Last Name: Assignment 1,2,ect) and then uploaded onto Blackboard.

3. Quizzes will be during your designated class time. . . IN PERSON, in a designated exam room. I will notify you the week prior when we will be conducting quizzes. You will be required to wear masks and the uniform of the day when meeting for these quizzes.

4. I do not accept late assignments.

5. This is very important. . . Your grade that will be shown in BB is not your actual Grade. . . Please refer to the grading matrix on the syllabus for the breakdown of your grade. (ex. Your lab grade and your presentation grade will not be in BB) They will be in my physical grade book.

DLC LAB SYLLABUS

See notes above regarding attendance. Labs may be difficult or impossible to make up after-the-fact. Seats are scarce, so advance reservation for make-ups is required.

Let me restate that: if you don't make arrangements in advance of missing a lab, you will likely not be able to make it up.

Follow the lab rules as described in the lab hand-out and on BlackBoard. Except for Labs 2 and 4, for which Regimental Manual Chapter 5-101A apply, the Uniform of the Day will be worn unless express permission of the instructor is applied for.

La b #	Name	Focus	Slide Deck
1-	Introduction to the simulator	Familiarization	Intro to Suez Max
2-	Cargo measurement	Field exercise: hand gauging, ullage tables, calculations	Cargo Measurement
3-	Cargo systems	Draw systems, then run familiarization again	
4-	Manifold Connection and Cargo Oil loading	Field exercise: connection to manifold. Simulator, start loading cargo	
5-	Loading and De-ballasting	Start loading, work ETF problems	yes
6-	Topping-off; De-ballasting	Top off to ullages. ETF, mid-point survey	
7-	Loading to Drafts	Shutting down against shore. "Trim tanks"	
8-	Cargo Oil Discharge, start	Start discharge; 20-min rate; ETF	

9-	Cargo Oil Discharge, start, 2nd iteration	Rate; ETF	
10-	Stripping cargo	Automatic Unloading system, pump controls	
11-	Crude Oil Washing	Reason for COW, storm ballast tanks	yes
12-	Team Crude Oil Washing	Record-keeping, teamwork	