

**Course: Steam Generators Lab EN-3131L**

**Fall 2022**

**Instructor: CAPT Jim Albani**

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**Prerequisites:**

None

Office Hours: Office Hours: M: 12:00, W: 09:00, Th: 12:00, or by appointment

**Notice:**

- No cell phone use in the lab.
- **Students must bring their lab book and writing utensils to every lab.**
- Once lab starts, if a cadet leaves the lab, he/she will not be allowed back into the lab.
- All COVID-19 protocols and policies will be followed.
- You must bring your mask to lab and wear it if requested by the lab instructor.

**Lab Description:**

Steam Generation lab uses the T/S Kennedy, operational trainers, and simulators. The goal of the lab is for students to be able to identify components onboard the T/S Kennedy with regards to the steam plant. Students will be able to understand the steam cycle and all accessories on a boiler. They will also be able to conduct water treatment tests and be able to start up the Wilkinson boiler.

Note: It is expected that the TS Kennedy will not be available for much of the semester due to an expect shipyard period. Lab adjustments will be made as required.

**This lab is STCW requirement. All labs must be attended.**

**Required PPE:**

**All students shall be in a boiler suit, clean with no rips and with a name tag. You must have some form of ID to gain access to the ship. Hard Hat, Eye Protection, Hearing Protection, Long sleeve boiler suit, steel-toe boots, flashlight that is working, and gloves are required.**

**Attendance:**

- **Lab instruction classes are Mandatory. Disciplinary action will be taken if needed. An “Incomplete” grade will be issued if all labs are not completed.**
- **Labs meet every other week. You are required to bring proper PPE to all Labs.**

**Grading:**

- Lab Quiz 1 10%
- Lab Quiz 2 10%
- Lab Quiz 3 10%
- Lab Quiz 4 10%
- Lab Quiz 5 10%
- Lab Quiz 6 10%
- Lab Participation 40%

### **Labs:**

All Engineering Labs must be attended and completed to the satisfaction of the lab instructors to receive a final grade in this course. You must show up with all your PPE.

Due to potential COVID-related changes in lab space capacities and significant scheduling limitations, it is possible that students may not be able to make up missed in-person labs. The expectation for this course is that you will attend all labs at the scheduled time. If you miss a lab(s) and we are unable to accommodate a makeup, your course grade will be impacted and may result in a failing grade; and you may be advised to withdraw from the course.

### **Topics:**

- Main Steam Cycle
- Boiler Fittings and Lines
- Superheated and Desuperheated Steam Systems
- Fuel Oil System
- Boiler Internals Dock Boiler
- Combustion Control and L3
- Water Treatment
- Wilkinson Start-Up
- Navy Dock Boiler

### **Student Learning Outcomes:**

Success in this lab will be measured through the application of your understanding of the course topics and thru quizzes.

### **Learning Objectives:**

- Locate and identify all components relating to the training ship's boilers
- Light off the fire tube boiler in the boiler lab
- Conduct boiler tests

### **STCW Learning Objectives:**

- OICEW-4-2A Respond to engine room alarms
- OICEW-5-2A Light off main boiler
- OICEW-5-2B Secure main boiler
- OICEW-5-2C Bottom blow boiler
- OICEW-5-2D Test and treat boiler water
- OICEW-6-1A Transfer fuel
- OICEW-10E1B Start and secure oily water separator
- OICEW-4E3I Monitor and operate auxiliary boiler
- OICEW-5E2B Ballast and deballast a tank

*Note: While every effort is made to adhere to the syllabus, instructor reserves the right to amend the course content as required.*