

# OPERATION AND MAINTENANCE ENGINEERING: STEAM PLANT

**Pathway: Construction, Maintenance & Utilities**  
**Chair: William (Bill) Elarton, Room SQ/B-122**  
**(213) 763-3700, [cdm@lattc.edu](mailto:cdm@lattc.edu)**



Award Title	Award Type	GE Units	Required Course Units	Major Elective Units	Major Units
Operation & Maintenance Engineering: Steam Plant	C		12	24	36
For additional related degrees and certificates, refer to programs under Refrigeration and Air Conditioning Mechanics.					

## PROGRAM OVERVIEW

Most craft workers specialize in one kind of work, such as plumbing or carpentry. General maintenance and repair workers, however, have skills in many different crafts. They repair and maintain machines, mechanical equipment, and buildings. They also work on plumbing, electrical, and air conditioning and heating systems. They build partitions, make plaster or drywall repairs, and fix or paint roofs, windows, doors, floors, woodwork, and other parts of building structures. In addition, they maintain and repair specialized equipment and machinery found in cafeterias, laundries, hospitals, stores, offices, and factories.

A general maintenance worker's typical duties include troubleshooting and fixing faulty electrical switches, repairing air-conditioning motors, and unclogging drains. In addition, newer buildings sometimes have computer-controlled systems that allow maintenance workers to make adjustments in building settings and monitor for problems from a central location; for example, they can remotely control light sensors that turn off lights automatically after a set amount of time or identify a broken ventilation fan that needs to be replaced.

General maintenance and repair workers inspect and diagnose problems and determine the best way to correct them, frequently checking blueprints, repair manuals, and parts catalogs. They obtain supplies and repair parts from distributors or storerooms. Using common hand and power tools such as screwdrivers, saws, drills, wrenches, and hammers, as well as specialized equipment and electronic testing devices, these workers replace or fix worn or broken parts, where necessary, or make adjustments to correct malfunctioning equipment and machines.

General maintenance and repair workers also perform routine preventive maintenance tasks to ensure that machines continue to run smoothly, building systems operate efficiently, and the physical condition of buildings does not deteriorate. Following a checklist, they may inspect drives, motors, and belts, check fluid levels, replace filters, and perform other maintenance actions. Maintenance and repair workers keep records of their work.

The "Certified Steam Boiler License" is a specialized certification required for many maintenance workers. LATTC offers a Certificate of Achievement-Steam Plant to address this need. The core of the program is designed to prepare students to take the Boiler/Steam Plant certification exam, while the remainder is structured to create students who possess an array of skills which would be transferable to a variety of job settings, creating a highly capable general maintenance worker.

By fulfilling the program requirements, students will have the necessary skills for entry and mid level jobs in the general maintenance industry. This program prepares the student for basic electrical, heating and refrigeration, plumbing, and carpentry work, and to pass the "Certified Boiler/Steam Plant" License exam.

## PROGRAM LEARNING OUTCOMES (PLOs)

Upon completion of the **Certificate** program, students are able to:

1. Identify and describe the function of all major components of a high and low pressure boiler system utilizing technical manuals.
2. Perform calculations and measurements necessary in the operations and maintenance field in accordance with industry standards.
3. Troubleshoot a high and low pressure boiler system in utilizing appropriate materials and equipment, in accordance with industry safety standards.

## OPERATION & MAINTENANCE ENGINEERING: STEAM PLANT

**Certificate of Achievement**  
**Major Units: 36**

A Certificate of Achievement in Operation & Maintenance Engineering: Steam Plant may be earned by completing 12 units of Required Courses and 24 units of Major Electives with a "C" or better in each course.

### REQUIRED COURSES

		UNITS
OPMAINT 228	Steam Plant Operation I	6
OPMAINT 229	Steam Plant Operation II	6

### MAJOR ELECTIVES

<b>Select at least 24 units from the courses below</b>		UNITS
CRPNTRY 111A	Construction IA	3
CRPNTRY 241	Blueprint Reading and Estimating	3
ECONMT 100	(O.S.H.A.) Safety Standards: Construction and Industry	2
ECONMT 105	Fundamentals of Solar Electricity	3
ECONMT 110	Renewable Energy Systems	3
ECONMT 171	Electrical Codes and Ordinances I	3
ECONMT 181	Basic Wiring Practices	3
ECONMT 182	Basic Diagram and Circuit Practices	1
PLUMBNG 028	Plumbing Code I	3
PLUMBNG 031	Backflow Prevention Devices	3
PLUMBNG 145 †	Plumbing Installation and Service	3
REF A/C 159	Principles and Practices of Electric Circuits and Controls	4
REF A/C 160	Refrigeration System Principles and Practices	4
REF A/C 161	Air Conditioning System Principles and Practices	4
REF A/C 162	Piping Principles and Practices	4
REF A/C 164	Gas Heating Systems	4
REF A/C 165	Ice Storage Air Conditioning	4
REF A/C 176	Heating and Air Conditioning I	3
REF A/C 177	Heating and Air Conditioning II	3
REF A/C 187	Servicing I	3

## MAJOR ELECTIVES - CONTINUED

REF A/C 188	Servicing II	3
REF A/C 202	Refrigeration Fundamentals	3
REF A/C 203	Compression Systems of Refrigeration	3
REF A/C 204	Functions and Compression System Components	3
REF A/C 208	Refrigerant Management – EPA Section 608 Certification	4
REF A/C 199	Mechanical Code I - HVACR	3

## USEFUL LATTC LINKS:

**College Catalog:** <http://college.lattc.edu/catalog/>

**Financial Aid Office:** <http://college.lattc.edu/financialaid/>

**Counseling Department:** <http://college.lattc.edu/counseling/>

**General Education Information:** <http://college.lattc.edu/catalog>

**Construction, Design, and Manufacturing Pathway:** <http://college.lattc.edu/cdm>

You can register in these classes by logging on to the Student Information System at <http://college.lattc.edu/student/new-students/register-now/>

For additional information consult a LATTC college counselor.