Oil Refinery Operations

400 hours

Course Overview/Description

The Oil Refinery Operations Online Training Program will prepare you for an entry-level career as an oil refinery operator. In the United States there are thousands of oil refineries. These facilities are operated by oil refinery operators. Oil refinery operators are highly paid and enjoy a stable work environment, and there’s an ongoing need for entry-level personnel. This online certificate program is offered in partnership with major colleges, universities, and other accredited education providers.

Generally, oil refinery operators enter the workforce in entry-level positions and work their way up, sometimes to senior management positions. Currently a large portion of the workforce is retiring, creating a critical shortage of technical workers for many years to come.

Very few institutions provide training for entry-level operators. This is a unique, user-friendly program designed for people who have minimal knowledge of the industry, math, physics, or chemistry. The necessary science concepts are built into the program modules.

Oil refinery operators have the responsibility to make sure unit and process systems function properly. They consider personnel safety as the primary objective and ensure production processes are operating safely. They continually monitor instrumentation and the operation of equipment and make adjustments to keep system process variables within acceptable ranges. Oil refinery operators also detect potential and actual problems and take corrective action to prevent the interruption of system operations.

Depending upon industry and location, entry-level oil refinery operators can make $13.00 to $20.00 per hour. After a few years of experience, generally the pay range is $18.00 to $35.00 per hour. Benefits are usually above-average for workers. Oil refinery operators are rarely laid off, and nearly all regions of the United States have oil or hydrocarbon manufacturing facilities.

Course Objectives

Upon successful completion of this program, you’ll be able to:

• Operate an oil refinery with safety as the prime consideration
• Monitor instrumentation and the operation of equipment
• Make adjustments to keep system process variables, such as flows, temperatures, and pressures, within acceptable ranges
• Detect problems and take corrective action to prevent the interruption of system operations
• Analyze operational trends and take corrective actions
• Use standard operating procedures to start/stop production equipment
• Maintain communication with other operators, maintenance, and management

Course Outline

This is a comprehensive course and consists of a number of learning modules. Each of the
modules addresses a specific scope and consists of an on-line test. The pass mark for the
tests is 70% - however the students are allowed to take the tests a number of times.

This course consists of the following modules:

I. Basic Safety
II. Basic Hazard Communication
III. Basic Lockout-Tagout
IV. Math 1000: Basic Math 1
V. Math 2000: Basic Math 2
VI. Math2500: Basic Math 3
VII. Applied Physics 1
VIII. Applied Physics 2
IX. Applied Physics 3
X. Heat Exchangers
XI. Lubrication and Bearings
XII. Electrical Safety
XIII. Electricity for Operators and Technicians
XIV. Industrial Valves
XV. Compressed Air
XVI. How to Read Process Drawings
XVII. Basic Process Instrumentation and Control
XVIII. Pump Fundamentals
XIX. Centrifugal Pumps Operation
XX. Refining 1000: Introduction to Petroleum Refining
XXI. Refining 2000: Distillation Technology
XXII. Refining 3000: Basic Refinery Processes

Prerequisites/Audience

To enroll in this program, you should have basic keyboarding and computer skills,
and be comfortable navigating the Internet and using e-mail. You should have a high
school diploma or the equivalent.
This program is for you if you seek entry-level employment in an oil refinery.

**PC Requirements/Materials**

To take this program, you’ll need the following items:

- Computer running Windows XP, Windows 2000, Windows NT, or Windows 95/98
- Internet Explorer 6.0 or higher
- Access to the Internet (a high-speed connection is recommended)

No textbooks are required for this program. You’re encouraged to print the on-screen program material for your reference. It’s a good idea to go through the printed material prior to job interviews.

**Instructor Bio**

**Dr. John Galiotos**, Ph.D., is the instructor for this program. He has extensive experience as professor and chair for the process technology department at one of the largest community colleges in the country.