



## **ENVS 6006: Environmental Operating Procedures**

### **Learning Outcome**

*When you complete this module, you will be able to ...*

Describe how and where environmental operating procedures can be employed in industry.

### **Learning Objectives**

*Here is what you will be able to do when you complete each objective:*

1. Describe ways to assess environmental risks of industrial activities.
2. Discuss methods of implementing environmental operating procedures.
3. Outline the elements of an Emergency Response Plan for responding to environmental incidents.

## **INST 6023: Electronic and Pneumatic Control Systems**

### **Learning Outcome**

*When you complete this module, you will be able to ...*

Compare electronic and pneumatic instrumentation as applied to typical industrial control systems.

### **Learning Objectives**

*Here is what you will be able to do when you complete each objective.*

1. Sketch and describe the equipment and components necessary to form a pneumatic control system.
2. Sketch and describe the equipment and components required for an electronic instrumentation and control system.
3. Describe the advantages and disadvantages of pneumatic vs. electronic instrumentation and control systems.

## **INST 6057: Pneumatic Recorders**

### **Learning Outcome**

*When you complete this module you will be able to ....*

Discuss the classifications, designs, components, operation and calibration of pneumatic recorders.

### **Learning Objectives**

*Here is what you will be able to do when you complete each objective.*

1. Define and state the purpose of pneumatic recorders.
2. Describe the design, operation and application of the two main classifications of recorders, circular chart and strip chart recorders. Explain a secondary method of recorder classification.
3. Describe the main components of chart recorders.
4. Explain calibration of recorders.

## **INST 6140: Velocity Flow Meter**

### **Learning Outcome**

*When you complete this module you will be able to ....*

Explain the operation and installation of Velocity gas meters and the use of data gathering devices.

### **Learning Objectives**



***Here is what you will be able to do when you complete each objective.***

1. Describe the operating principle of a vortex or shedding meter.
2. Understand the installation and maintenance of a vortex meter.
3. Determine vortex frequency using a formula.
4. Describe equipment operating practices used with a velocity meter
5. Discuss some new technologies that have been introduced to reduce the effects of noise.

## **MACH 6005: Tubing and Tube Fittings**

### **Learning Outcome**

***When you complete this module you will be able to ....***

Select the correct type of tubing and fittings.

### **Learning Objectives**

***Here is what you will be able to do when you complete each objective.***

1. Describe the differences between pipe and tubing.
2. Describe tubing sizes, materials, and pressure ratings.
3. Describe flexible tubing materials and applications.
4. Explain the principle behind compression fittings.
5. Explain the various types and applications of tube fittings.
6. Describe tube cutting and bending procedures.

## **MATH 6011: Ratio and Proportion**

### **Rationale**

***Why is it important for you to learn this material?***

Describe the concepts of ratio and proportion.

### **Learning Outcome**

***When you complete this module you will be able to ....***

Find ratios of one quantity to another quantity. Solve word problems involving ratios and proportions.

## **PROP 6039: Field Operations - Line Heaters**

### **Rationale**

***Why is it important for you to learn this material?***

To have a basic understanding of the design, configuration, and operation of oilfield indirect fired line heaters.

### **Learning Outcome**

***When you complete this module you will be able to ....***

Describe the type of equipment used to heat wellhead gas to prevent the formation of hydrates.

### **Learning Objectives**

***Here is what you will be able to do when you complete each objective.***

1. Explain why line heaters are used.
2. Describe the configuration of indirect fired heaters.
3. Understand the operational procedures for placing a line heater into service.



4. Describe operational and maintenance problems with fired heaters.

## **PROP 6040: Portable Flarestacks**

### **Rationale**

*Why is it important for you to learn this material?*

For the purpose of proper placement, erecting, and rig out of portable flarestacks and to gain the knowledge and understanding regarding their manufacture and use guidelines.

### **Learning Outcome**

*When you complete this module you will be able to ....*

Briefly explain the operations and maintenance of portable flarestacks. To explain the effects of wind on the stability of flarestacks.

### **Learning Objectives**

*Here is what you will be able to do when you complete each objective.*

1. Tell the difference between a portable and freestanding Flarestacks.
2. Safely and properly, conduct maintenance on portable Flarestacks.
3. Safely set up and operate a portable Flarestack.
4. Calculate the flarestack wind load.
5. Safely take down and out of service portable Flarestack.
6. Complete pre trip checklist prior to towing portable Flarestack.

## **PROP 6041: Sampling of Hydrocarbon Gases and Liquids**

### **Learning Outcome**

*When you complete this module you will be able to ....*

Discuss the types of sampling methods and the guidelines for each, as well as the importance of well testing.

### **Learning Objectives**

*Here is what you will be able to do when you complete each objective.*

1. Explain the guidelines for testing new gas and oil wells.
2. Discuss the general considerations to make when performing routine sampling.
3. Describe the various gas and liquid sampling methods and the advantages and disadvantages of each.
4. Describe safety considerations and problem areas to avoid.

## **PROP 6042: Equipment Selection and Set-Up**

### **Learning Outcome**

*When you complete this module you will be able to ....*

Discuss the design, safety, and operational details that must be considered before a well is ready for production.

### **Learning Objectives**

*Here is what you will be able to do when you complete each objective.*



1. Discuss the factors that influence the choice of site-required equipment.
2. Discuss the equipment placement and setup requirements for a well site.
3. Discuss stage separation.

## **PROP 6047: Conventional Separators**

### **Learning Outcome**

*When you complete this module you will be able to ....*

Recognize the characteristics and procedures of operating and maintaining conventional separators.

### **Learning Objectives**

*Here is what you will be able to do when you complete each objective.*

1. Describe the design requirements and characteristics of a conventional separator.
2. Discuss the instrumentation on a typical separator.
3. Discuss the operational problems that may be encountered in a typical separator.
4. Discuss the maintenance of a typical separator.

## **PROP 6048: Fracs/Stimulations/Tree Savers and Equipment**

### **Rationale**

*Why is it important for you to learn this material?*

It is important to learn this material because of the nature of the well tester's job scope on location. There are several key components of the well tester's job such as: doing a clean-up on a fracture, doing a stimulation treatment that requires extensive knowledge in how the operations are conducted in order to help set guidelines, as well as flowing a well that has been treated, i.e., backpressure on equipment. You will have to keep in mind the retention time needed to separate well effluents correctly and the possible addition of auxiliary equipment needed after the treatment as a result, changes in well test programs may have to be made etc.

### **Learning Outcome**

*When you complete this module you will be able to ....*

Understand each fracture or stimulation treatment process. Identify and understand some issues that you may face while returning one of these treatments to your surface equipment. Converse more easily and aid a client company more in a well test programming role. The information contained herein will also familiarize you with fracturing equipment and the different services required to complete a frac job. Learn some key operation guidelines to help you successfully return a fracture or stimulation process through your surface equipment.

### **Learning Objectives**

*Here is what you will be able to do when you complete each objective.*

1. Understand each fracture or stimulation treatment process from a definitive view.
2. Identify and understand issues/problems related to each process and their preventative measures. Identify and prepare to combat surface issues as a result.
3. You will become familiarized with tree savers and the equipment required to complete a frac job.
4. You will learn some frac terminology.



# PROP 6049: Chokes, Frac Manifolds and Abrasive Control

## Rationale

*Why is it important for you to learn this material?*

To have a basic understanding of the different types and styles of chokes and frac manifolds available and used in the well testing field. To be able to calculate the gas flow rate using choke coefficients. To gain awareness of problems with abrasives and how to prevent them.

## Learning Outcome

*When you complete this module you will be able to ....*

Briefly explain the operation of chokes, frac manifolds and be able to calculate a gas flow rate for a positive choke. Understand erosive environments.

## Learning Objectives

*Here is what you will be able to do when you complete each objective.*

1. Explain the difference between adjustable stem and seat chokes and positive chokes.
2. Describe the various frac manifold configurations.
3. Identify and understand how and why erosion is a hazard.
4. Calculate a flow rate using a positive choke.

# PTPR 6017: Production Problems and Prevention

## Learning Outcome

*When you complete this module you will be able to ....*

Discuss the types of production problems that may be encountered in the start-up and continuous operation of oil and gas wells.

## Learning Objectives

*Here is what you will be able to do when you complete each objective.*

1. Describe types of corrosion associated with gas well components and methods used to reduce these corrosion problems.
2. Discuss mechanical problems that may be encountered and describe how they are prevented or remedied.
3. Discuss how hydrates are formed, describe the problems they cause, and detail the methods used to prevent or remove hydrates.
4. Discuss what is meant by the term “liquid loading” in a well, how to recognize it and how to prevent it.

# SAFE 6007: Incident Reporting, Investigation and Analysis

## Rationale

*Why is it important for you to learn this material?*



Incidents do occur. By being prepared and knowledgeable in the steps to be taken ensures we can be more effective and understanding when the event occurs.

## Learning Outcome

***When you complete this module, you will be able to...***

State the purpose and benefits of incident reporting, investigation, and analysis.

## Learning Objectives

***Here is what you will be able to do when you complete each objective:***

1. Define *incident*, *near miss*, and *accident*.
2. Describe the reporting and incident investigation requirements of the Alberta Occupational Health and Safety Act, Regulation and Code.
3. Discuss workers' reluctance to report incidents.
4. Describe the content and maintenance of documents for reporting incidents.
5. Explain the importance of timely investigations in determining the causes of an incident.
6. Describe the steps in conducting an incident investigation.
7. Describe how incident analysis and hazard control affect management of the workplace with respect to safety.

# SAFE 6026: Handling of Hydrocarbon Fluids

## Rationale

***Why is it important for you to learn this material?***

The handling and transportation of hydrocarbon fluids are common events in industrialized areas. Hydrocarbon fluids are flammable and the more highly refined they are, the higher their potential for accumulating a static charge. The potential for fire or explosion is always present unless these fluids are properly handled.

## Learning Outcome

***When you complete this module, you will be able to...***

Describe the safe procedures for loading, storing, unloading and transporting hydrocarbon fluids.

## Learning Objectives

***Here is what you will be able to do when you complete each objective:***

1. Describe the significant properties of the most common hydrocarbon fluids.
2. Describe the sources of ignition for a hydrocarbon.
3. List the safety requirements for loading, unloading, and transporting hydrocarbon fluids.
4. Describe the general safety issues associated with storing and gauging hydrocarbon liquids.

# SAFE 6038: Handling Hazardous Wastes Safely

## Rationale

***Why is it important for you to learn this material?***

Almost all human activity generates waste. Some of this waste is hazardous and must be handled safely and disposed of properly. Knowledge of safe handling practices and disposal procedures will ensure personal and public safety as well as minimize any adverse impact on the environment.

## Learning Outcome



***When you complete this module, you will be able to...***

Describe the procedures for the safe handling and proper disposal of hazardous wastes.

## **Learning Objectives**

***Here is what you will be able to do when you complete each objective:***

1. Describe the legislative requirements concerning hazardous wastes.
2. Identify and classify the nature of particular groups of hazardous wastes.
3. Discuss the main principles of waste management and the four “R's.”
4. List the key elements of a waste audit, and discuss the potential environmental risk assessment.
5. Describe the various treatment options for hazardous wastes.
6. Discuss waste disposal options, and requirements regarding storage and transportation of hazardous wastes.
7. Describe the safety requirements when sampling hazardous wastes.
8. Outline the special requirements for handling specific materials, such as biohazardous and radioactive wastes.

## **SAFE 6053: Introduction to Hazard and Task Analysis**

### **Learning Outcome**

***When you complete this module, you will be able to...***

Identify hazards associated with assigned tasks in the workplace.

### **Learning Objectives**

***Here is what you will be able to do when you complete each objective:***

1. Discuss how to identify workplace hazards.
2. Describe methods for dealing with hazards.
3. Analyze tasks for potential hazards.

## **SAFE 6090: Safety Equipment**

### **Learning Outcome**

***When you complete this module, you will be able to...***

Have the knowledge of all safety equipment available on your work locations.

### **Learning Objectives**

***Here is what you will be able to do when you complete each objective:***

Identify the different types of breathing apparatuses available to use when working in toxic environments.