



ADMN 6044: Post Job Management

Rationale

Why is it important for you to learn this material?

It is important to know the proper procedures for closing out a job so that rigging and equipment is maintained for future use and personnel are adequately trained, as well as future incident and accident prevention.

Learning Outcome

When you complete this module you will be able to

Describe the proper procedures for management post-job, rigging out and what happens for both equipment and personnel after rigging out is complete.

Learning Objectives

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

1. Describe the purpose and components of Post-Job Management.
2. Describe the rig out inspection.
3. Describe the procedures after rigging out.

AMEC 6007: Linear Velocity and Acceleration

Learning Outcome

When you complete this module you will be able to

Define speed, velocity, distance, and acceleration and solve simple linear problems involving velocity, time, and distance.

Learning Objectives

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

State Newton's laws of motion.

CHEM 6012: Oil and Gas Compositions and Sales Specifications

Learning Outcome

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

Discuss the fundamentals of chemistry as they apply to oil and natural gases and their basic classifications and sales specifications.

Learning Objectives

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

1. Discuss specific chemical terms and definitions as they apply to oil and natural gases.
2. Describe the grouping of hydrocarbon compounds found in natural gases.
3. Describe the non-hydrocarbon compounds that contaminate and dilute natural gases.
4. Describe the types of oils and natural gases.
5. Describe typical sales/delivery specifications for oil and natural gases.



CODE 6024: Introduction to Regulators and Regulations

Rationale

Why is it important for you to learn this material?

As a well tester, an overall understanding of the purpose, intent, and scope of various acts, regulations, and agencies regulating the industry is critical. These impact the energy industry and the work of well testers daily. It is also important to note that these regulations are under continual revision, and thus well testers are responsible to be aware of not only current regulations but the ongoing revision process as well.

Learning Outcome

When you complete this module you will be able to

Describe and explain the main regulatory bodies and legislation for oil and gas in Alberta and British Columbia.

Learning Objectives

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

1. Describe the basic purpose and function of the British Columbia Oil and Gas Commission (OGC).
2. Describe the basic purpose and function of the Alberta Energy Resources Conservation Board (ERCB).
3. Describe the purpose and use of IRP 4.0 (Industry Recommended Practice): Well Testing and Fluid Handling.
4. Describe the importance and function of the Occupational Health and Safety Code and its regulatory bodies.
5. Describe the content, purpose, and implications of Bill C45 (Liability and Employer Accountability).

DRLG 6078: Underbalanced Drilling and Completions

Rationale

Why is it important for you to learn this material?

Underbalanced drilling occurs when the formation pressure is greater than the bottom hole circulation pressure, thus creating an inflow of reservoir effluent into the circulated stream. This stream must be controlled at the surface, usually utilizing chokes and separation devices at surface. This equipment is similar to that used in conventional well testing; therefore knowledge of this process is an asset to the well tester.

Underbalanced drilling is a relatively recent technique used to maximize production for both existing and newly built wells. It involves using mud lightened by the addition of nitrogen or other gas to minimize damage to the producing reservoir by drilling fluids. As a well tester, it is important to understand both the purposes and techniques used in underbalanced drilling completions.



Learning Outcome

When you complete this module you will be able to

Explain the rationale for underbalanced completions and the techniques utilized, as well as describe the equipment utilized for this drilling technique.

Learning Objectives

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

1. Describe Underbalanced Drilling (UBD) and explain the rationale for drilling underbalanced rather than conventionally.
2. Describe the general techniques in drilling mediums and injection methods for Underbalanced Drilling (UBD) completions.
3. Describe the equipment used for Underbalanced Drilling (UBD) completions.

INST 6031: Types of Feedback: Determining the Controller's Action

Learning Outcome

When you complete this module you will be able to

1. Describe positive and negative feedback, and their effects in a feedback control loop.
2. Determine the action required of a controller in a simple feedback control loop.
3. Explain direct and reverse output indication of the controller.

Learning Objectives

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

Describe what is meant by positive and negative feedback in a control loop, state which of the two types of feedback is desirable in a feedback control loop, explain what is meant by direct and reverse action of a control loop component, state the criterion for the number of reverse acting elements required in a simple feedback control loop, determine the automatic controller action required for given examples, explain why the selection of the controller action is used to effect the correct number of reverse acting elements in the control loop, given a controller's action; place the correct algebraic signs on the error detector inputs and calculate the error from known values of the setpoint and the measurement signal, explain the difference between direct and reverse controller action, and direct and reverse controller output indication, convert a controller's output indication to the actual output.

INST 6130: Introduction to Piping Systems

Learning Outcome

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

Describe the basics of piping systems, piping design, and drawings. Understand the issues involved in the fabrication, repair and alteration of piping systems.

Learning Objectives

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

1. Understand the requirements for designing and engineering a small piping system.



2. Understand the requirements, design and engineering of a piping system for a well testing system.
3. Be familiar with the material requirements for well testing piping systems.
4. Identify the purpose of different types of flow diagrams.
5. Understand the complexities involved with fabrication and repair/alteration of piping systems.

INST 6131: Introduction to Non Destructive Examination (NDE)

Learning Outcome

When you complete this module you will be able to

Describe six commonly used methods of NDE in the pressure equipment industry.

Learning Objectives

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

1. List the six common NDE methods used in the pressure equipment industry.
2. Define Flaw, Indication, Discontinuity and Defect.
3. Describe the scientific principles supporting each of six NDE methods described in the module.

PROP 6051: Gas Compression - Auxiliaries, Stage Arrangements

Learning Outcome

When you complete this module you will be able to

Discuss certain auxiliary equipment necessary for efficient and safe operation of gas compressors.

Learning Objectives

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

1. Describe the purpose of separators and heat exchangers as used on gas compressors and the improved operational efficiency that results from the use of this equipment.
2. Discuss the various stage configurations of compressors and describe where the auxiliary equipment is fitted on these stages.

PTDR 6004: Occurrence of Petroleum Deposits

Learning Outcome

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

Discuss the history of natural gas development, the divisions of the gas industry, and describe the origins and geology of petroleum formation.

Learning Objectives

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

1. Describe the categories of rocks in the earth's crust, the geological formations that cause oil and gas to accumulate, and the origin of those petroleum deposits.



2. Discuss the various divisions of the natural gas industry, including exploration, drilling, discovery, development, production, processing, transmitting, storing and marketing.
3. Describe the history of natural gas discovery in Canada and its development in Alberta.

PTPR 6005: Corrosion Control

Learning Outcome

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

Describe the more common methods used by industry to control corrosion.

Learning Objectives

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

1. Explain how caustic embrittlement occurs in boilers and the preventive measures that should be taken.
2. Discuss the galvanic series.
3. Discuss the effects of environmental fluid velocities, pH, temperature, oxygen content, micro-organisms, and dissolved solids on corrosion rates.
4. Discuss the methods whereby corrosion inhibitors accomplish their job.
5. Discuss cathodic protection systems utilizing sacrificial anodes and galvanic anodes to produce the necessary current.
6. Describe the impressed current cathodic protection system and the importance of correctly connecting and maintaining it.
7. Describe the purpose of different types of groundbeds.
8. Discuss the methods of preventing caustic gouging, hydrogen damage, and pitting in boilers.
9. Discuss the problem of stress corrosion cracking of stainless steels in a chloride environment and how stress corrosion cracking can be controlled in an amine environment.

PTPR 6006: Corrosion Mechanisms

Rationale

Why is it important for you to learn this material?

Understanding the mechanism of corrosive processes is an important step in designing to reduce and mitigate existing corrosion in an industrial process. In this section, the student will learn about the most common types of corrosion that affect industrial equipment. A specific example of water-side corrosion associated with boilers will be used. Where applicable, the corrosion mechanism will be discussed.

Learning Outcome

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

Describe the most common types of corrosion that affect industrial equipment.

Learning Objectives

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

1. Describe the fundamental conditions that are necessary to cause galvanic corrosion.
2. Describe three types of atmospheric corrosion.
3. Describe how an impressed current is used to protect buried structures.



4. Identify three types of bacteria that can increase corrosion and describe the condition that makes them flourish.
5. Identify the danger associated with stress corrosion cracking.
6. Describe three types of hydrogen-induced corrosion.
7. Identify the variables affecting the rate of two (sulphide and chloride) forms of stress corrosion cracking.
8. Describe the main types of waterside corrosion associated with boilers.

PTPR 6014: Wellbore Circulation Systems

Rationale

Why is it important for you to learn this material?

Understanding wellbore circulation systems is a key aspect of work with wells. While you will not be expected to be able to independently install and start-up a wellbore circulation system on the basis of this material, it is important to be familiar with this type of system: its purposes and procedures.

Learning Outcome

When you complete this module you will be able to

At the end of this module, you will have a general understanding of Wellbore Circulation Systems: of both why and how they are used.

Learning Objectives

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

1. Describe the characteristics and reasons for using Wellbore Circulation Systems.
2. Identify the components of a Wellbore Circulation System.
3. Describe the installation of Wellbore Circulation Systems.
4. Describe the start-up and continuous monitoring procedures for Wellbore Circulation Systems.

THRM 6008: Real Gas Relationships

Learning Outcome

When you complete this module you will be able to

Apply gas laws to pure gases and gas mixtures for both ideal and non-ideal gas behaviour.

Learning Objectives

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

Solve problems using the generalized ideal gas law.