



UNIVERSITY of  
DENVER

DANIELS COLLEGE OF BUSINESS  
Franklin L. Burns School of Real  
Estate & Construction Management

## FROM PROSPECT TO PIPELINE TO MARKET (PTPM) CLASS DESCRIPTIONS

### **ORIGINS OF OIL & GAS, OIL AND NATURAL GAS OVERVIEW AND PETROLEUM INDUSTRY STRUCTURE**

In this course we review of the origins of the raw material comprising the foundation of the industry's value chain. In the case of petroleum, the origins of crude oil and natural gas can be traced back millions of millions of years, to the seabed of ancient oceans. We examine information about the composition of oil and natural gas, the location of major oil & gas resources around the world, and current patterns of, as well as future projections for, oil & gas production and use. We will also discuss information on the technical assessment of potential hydrocarbon-bearing formations, the legal and contractual aspects of obtaining the right to explore for, and develop, such formations, and the economic and risk-assessment methods used by the petroleum industry to guide decision-making. Students will develop understanding and competencies concerning types of oil & gas companies, the role of OPEC and current and future world refining capacity. This class is presented with a combination of video, lectures and a workshop format.

### **SEARCHING FOR & EVALUATING OIL & GAS, DRILLING & COMPLETION (ONSHORE)**

This course covers the key vocabulary and methods regarding obtaining rights to explore for and produce oil & gas and key contracts and methods for effective onshore exploratory drilling. Following the exploratory drilling and formation evaluation efforts and assuming a positive result from assessment of risks and potential rewards—the E&P company then begins an expensive campaign of development drilling. The objective is to drill down to those formations that show promise and to put into place the equipment and systems needed to produce oil & gas safely as well as cost-effectively. Critical topics are reviewed including horizontal drilling, fracking, seismic, well completion and effective ways to maximize profits and minimize costs. Students will learn the vocabulary and concepts and be able to demonstrate needed competencies through workshop exercises. Lectures and videos will also be used.

### **MANAGING OIL & GAS PRODUCTION AND TRANSPORTING OIL AND NATURAL GAS**

Once drilling has been completed, a major business objective for the exploration and development firm is to effectively manage production to achieve cost-effective, safe, and environmentally sensitive extraction of crude oil and natural gas from sub-surface reservoirs. This course focuses on actions that optimize production from oil & gas wells, including maintenance, repair, and improved recovery programs that help achieve this goal while extending the productive life of wells. Students will examine the initial processing of oil & gas and how both oil & gas are moved to buyers and users including various transportation methods including trucking, rail and pipelines. Also included is a review of where the industry is on the current and future export of both oil and natural gas. Students will learn the vocabulary and concepts and be able to demonstrate needed competencies through workshop exercises. Lectures and videos will also be used.

### **OPERATIONS IN THE MIDSTREAM AND DOWNSTREAM SECTORS, PRICING, TRADING AND MARKETS**

This course focuses on the business aspects of industry operations including the structure of the industry, focusing on the kinds of companies and organizations involved in producing and refining crude oil and natural gas. We examine the basic market and trading mechanisms, practices used to bring oil and natural gas to consumers and some of the major challenges that the industry may face in coming decades. Students will develop competencies regarding how buyers, sellers, brokers, traders, shippers, and other parties seek to discover and act on information about the supply/demand and prices of a wide range of energy commodities—crude oil and raw natural gas, as well as products ranging from jet fuel and industrial lubricants to gasoline, LNG, butane, and petrochemicals. Students will become familiar with important concepts including natural gas pricing and trading, hubs, LNG trading, gas-to-liquids technology, products derived from natural gas, oil trading including physical versus paper trading, pricing, with a historical perspective, oil pricing today, and gasoline distribution and marketing. Students will learn the vocabulary and concepts and be able to demonstrate needed competencies through workshop exercises. Lectures and videos will also be used.