IHRDC

Upstream e-Learning Pathways

A LEARNING PROGRAM FOR UPSTREAM TECHNICAL PROFESSIONALS

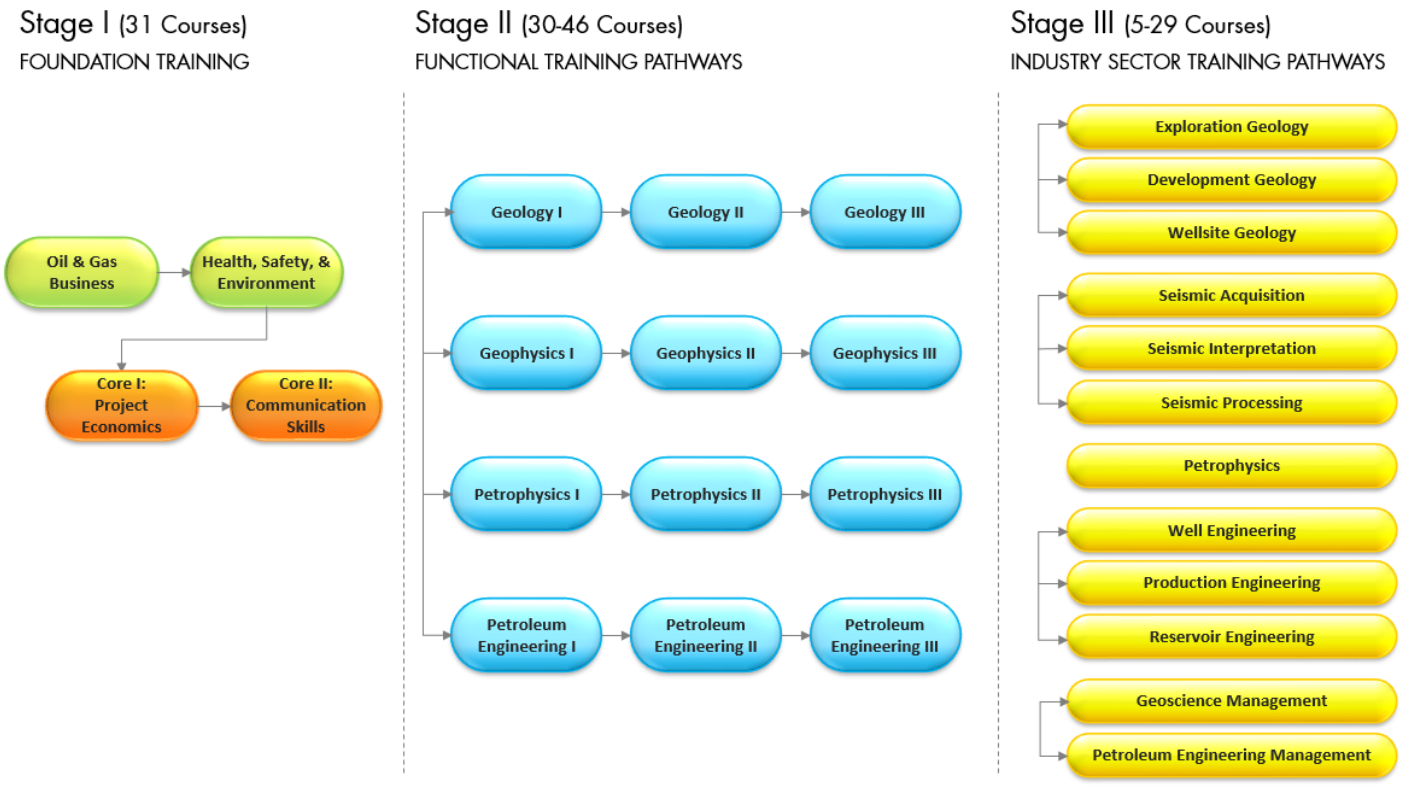
IHRDC's Upstream e-Learning **Pathways** are specifically designed to build competencies among Upstream petrotechnical specialists who work in a variety of Upstream sectors: geoscience management, exploration geology, seismic acquisition, drilling and production engineering, and petroleum engineering management. Focus areas include the four traditional Upstream specialties: Geology, Petrophysics, Geophysics, and Petroleum Engineering.

Stage I: Foundation Training provides the background learning required for all new Upstream personnel

Stage II: Functional Training Pathways are divided into four paths, one for each functional area

Stage III: Industry Sector Training Pathways provide the specific training in each industry sector.

Sequential lists of e-Learning courses for each of the three Stages are shown on the following pages. The content of each course may be found in our online catalog, www.ihrdc.com/e-learningsolutions.



Stage I
Foundation Training

Learning Summary: Stage I

	COURSES	LEARNING HOURS
OIL & GAS BUSINESS	7 COURSES	18 HRS
HEALTH, SAFETY & ENVIRONMENT	17 COURSES	15 HRS
CORE I: PROJECT ECONOMICS	5 COURSES	20 HRS
CORE II: COMMUNICATIONS SKILLS	2 COURSES	5 HRS

OIL & GAS BUSINESS

Petroleum Online e-Learning
- Oil & Gas Industry Overview
- Petroleum Geology & the Exploration Process
- Drilling and Well Completion
- Oilfield Development and Production
- Marketing & trading of Crude Oil
- Crude Oil Transportation & Storage
- Refining & Product Specifications

HEALTH, SAFETY & ENVIRONMENT

IPIMS Background Learning e-Learning
- Oilfield Safety

Operations & Maintenance:
- Material Safety Data Sheets (MSDS)
- Introduction to Electrical Safety
- Classes of Fires and Extinguishers
- Fire Safety
- Hazard Communication
- Hazardous Waste First Responder - Awareness
- Introduction to Hazardous Waste Operations
- Hearing Conservation
- Workplace Ergonomics
- Safety Orientation
- Introduction to Laboratory Safety
- Warning Signs and Labels
- Personal Protection Equipment
- Back Safety
- Driving Safety
- Lockout/Tagout

CORE I: PROJECT ECONOMICS

Business Essentials e-Learning
- Valuing Real Assets
- Practical Tools for Planning and Control
- Budgeting
- Time Value of Money Principles
- Risk and Return

CORE II: COMMUNICATION SKILLS

Business Essentials e-Learning
- Effective Communication
- Presentation Basics

Stage II
Functional Training

Learning Summary: Stage II

	COURSES	LEARNING HOURS
GEOLOGY I	19 COURSES	42 HRS
GEOLOGY II	11 COURSES	43 HRS
GEOLOGY III	16 COURSES	49 HRS

GEOLOGY

Geology I

IPIMS Background Learning e-Learning

- Fundamentals of Petroleum Geology
- Hydrocarbon Properties
- Subsurface Environment
- Reservoirs
- Hydrocarbon Generation and Migration
- Traps
- Habitat of Hydrocarbons in Sedimentary Basins
- Geologic Cross-Sections
- Subsurface Mapping
- Subsurface Facies Analysis
- Structural Geology
- Geographical Information Systems
- Fundamentals of Exploration Geophysics
- Basic Seismic Interpretation
- Seismic Contouring
- Formation Evaluation Overview
- Logging Equipment and Procedures
- Coring and Core Analysis

Business Essentials e-Learning

- Purposeful Presentations

Geology II

IPIMS Background Learning e-Learning

- Nonmarine Sandstone Reservoirs
- Shelf Marine Sandstone Reservoirs
- Marginal Marine Sandstone Reservoirs
- Deepwater Marine Sandstone Reservoirs
- Porosity Evolution in Sandstone Reservoirs
- Exploration in Carbonate Rocks
- Porosity Evolution in Carbonate Rocks
- Introduction to Petroleum Chemistry
- Well Logging Tools and Techniques
- Well Log Interpretation

Business Essentials e-Learning

- Purposeful Presentations

Geology III

IPIMS Background Learning e-Learning

- Evaporates and their Role in Petroleum Exploration
- Classic Sequence Stratigraphy
- Stratigraphic Disciplines and Sequence Stratigraphy
- Micropaleontology for Petroleum Exploration
- Chronostratigraphy and Microfossils
- Ongoing Development in Biostratigraphy
- Petroleum Geomechanics
- Applications of Petroleum Geochemistry
- Drilling and Well Completion
- Geosteering: Fundamentals, Planning, and Implementation
- Geological Messages in the Seismic Trace
- Fault Interpretation
- Risk Analysis Applied to Petroleum Investments
- Dipmeter Surveys
- Borehole Imaging

Business Essentials e-Learning

- Purposeful Presentations

Stage II
Functional Training

Learning Summary: Stage II

	COURSES	LEARNING HOURS
GEOPHYSICS I	11 COURSES	34 HRS
GEOPHYSICS II	11 COURSES	27 HRS
GEOPHYSICS III	8 COURSES	32 HRS

GEOPHYSICS

Geophysics I

IPIMS Background Learning e-Learning

- Fundamentals of Petroleum Geology
- Subsurface Mapping
- Fundamentals of Exploration Geophysics
- Geological Messages in the Seismic Trace
- Signal Theory: A Graphical Introduction
- Seismic Pulse Generation and Transmission
- Seismic Reflection
- Basic Seismic Interpretation
- Seismic Contouring
- Formation Evaluation Overview

Business Essentials e-Learning

- Purposeful Presentations

Geophysics II

IPIMS Background Learning e-Learning

- Hydrocarbon Properties
- Subsurface Environment
- Reservoirs
- Hydrocarbon Generation and Migration
- Traps
- Habitat of Hydrocarbons in Sedimentary Basins
- Introduction to Field Work
- Basic Processing
- Fault Interpretation
- Velocity Interpretation and Depth Conversion

Business Essentials e-Learning

- Purposeful Presentations

Geophysics III

IPIMS Background Learning e-Learning

- Multicomponent Seismic Applications
- 3-D and 4-D Seismic
- Gravity and Magnetics
- Crosswell Seismology
- Vertical Seismic Profiles
- Other Geophysical Techniques
- Integrated Reservoir Characterization

Business Essentials e-Learning

- Purposeful Presentations

Stage II
Functional Training

Learning Summary: Stage II

	COURSES	LEARNING HOURS
PETROPHYSICS I	14 COURSES	40 HRS
PETROPHYSICS II	13 COURSES	43 HRS
PETROPHYSICS III	9 COURSES	49 HRS

PETROPHYSICS

Petrophysics I

IPIMS Background Learning e-Learning

- Fundamentals of Petroleum Geology
- Hydrocarbon Properties
- Subsurface Environment
- Reservoirs
- Hydrocarbon Generation and Migration
- Subsurface Facies Analysis
- Formation Evaluation Overview
- Logging Equipment and Procedures
- Well Logging Tools and Techniques
- Well Log Interpretation
- Coring and Core Analysis
- Sampling and Analysis of Drilled Cuttings
- Mud Logging

Business Essentials e-Learning

- Purposeful Presentations

Petrophysics II

IPIMS Background Learning e-Learning

- Geologic Cross-Sections
- Subsurface Mapping
- Nonmarine Sandstone Reservoirs
- Porosity Evolution in Sandstone Reservoirs
- Porosity Evolution in Carbonate Rocks
- Introduction to Petroleum Chemistry
- Drilling and Well Completion
- Cased Hole Logging
- Reservoir Environments and Characterization
- Dipmeter Surveys
- Borehole Imaging

IPIMS Action Learning e-Learning

- Reservoir Rock and Fluid Properties

Business Essentials e-Learning

- Purposeful Presentations

Petrophysics III

IPIMS Background Learning e-Learning

- Petroleum Geomechanics
- Perforating
- Risk Analysis Applied to Petroleum Investments
- Integrated Reservoir Characterization

IPIMS Action Learning e-Learning

- Wireline Well Logging
- Well Log Quality Control
- Well Log Interpretation
- Petrophysical Model Updating

Business Essentials e-Learning

- Purposeful Presentations

Stage II
Functional Training

Learning Summary: Stage II

	COURSES	LEARNING HOURS
PETROLEUM ENGINEERING I	16 COURSES	40 HRS
PETROLEUM ENGINEERING II	9 COURSES	37 HRS
PETROLEUM ENGINEERING III	10 COURSES	34 HRS

PETROLEUM ENGINEERING

Petroleum Engineering I

IPIMS Background Learning e-Learning

- Fundamentals of Petroleum Geology
- Geologic Cross-Sections
- Subsurface Mapping
- Drilling and Well Completion
- Production Technology
- Reservoir Management
- Fluid Flow and the Production System
- Well Planning
- Basic Completion Design and Practices
- Completion Equipment
- Fundamentals of Reservoir Engineering
- Formation Evaluation Overview
- Logging Equipment and Procedures
- Fundamentals of Well Testing
- Fluid Sampling and Analysis

Business Essentials e-Learning

- Purposeful Presentations

Petroleum Engineering II

IPIMS Background Learning e-Learning

- Artificial Lift Methods
- Overview of Rigless Well Intervention
- Wellheads, Flow Control Equipment and Flowlines
- Cementing
- Perforating
- Well Logging Tools and Techniques
- Well Log Interpretation
- Drillstem Testing

Business Essentials e-Learning

- Purposeful Presentations

Petroleum Engineering III

IPIMS Background Learning e-Learning

- Petroleum Geomechanics
- Electric Line Well Intervention
- Slickline Well Intervention
- Coiled Tubing Well Intervention
- Cased Hole Logging
- Horizontal Wells: Completion and Evaluation
- Offshore Production Facilities
- Risk Analysis Applied to Petroleum Investments
- Coring and Core Analysis

Business Essentials e-Learning

- Purposeful Presentations

Stage III
Industry Sector Training

Learning Summary: Stage III

	COURSES	LEARNING HOURS
EXPLORATION GEOLOGY	29 COURSES	186 HRS

EXPLORATION GEOLOGY

IPIMS Background Learning e-Learning

- Prospect Generation
- Magnetostratigraphy
- Geochronological Dating Techniques
- Plate Tectonics and Sedimentary Basins
- Divergent Margins and Rift Basins
- Convergent Margin Basins
- Basin Analysis
- Play Analysis
- Photogeology and Remote Sensing

IPIMS Action Learning e-Learning

- Sedimentology
- Sequence Stratigraphy
- Seismic Sequence Stratigraphy
- Biostratigraphy
- Petroleum Geochemistry
- Tectonics
- Structural Geology
- Rock Properties and Mechanics
- Surface Geology
- Remote Sensing
- Geodetic Coordinate Systems
- Magnetostratigraphy, Chemostratigraphy, and Radiometric Dating
- Gravity, Magnetic, and Electromagnetic Exploration Methods
- 2-D Seismic Interpretation
- 3-D Seismic Interpretation
- Interpretation of Well Logs
- Exploratory and Delineation Drilling
- Exploration Process
- Project Economics, Risk, and Uncertainty Analysis
- Value of Information

Stage III
Industry Sector Training

Learning Summary: Stage III

	COURSES	LEARNING HOURS
DEVELOPMENT GEOLOGY	21 COURSES	141 HRS

DEVELOPMENT GEOLOGY

IPIMS Background Learning e-Learning

- Basic Geostatistics
- Production Technology
- Reservoir Management
- Microseismic Studies of Reservoirs
- Cased Hole Logging
- Integrated Reservoir Characterization

IPIMS Action Learning e-Learning

- Sedimentology
- Structural Geology
- Rock Properties and Mechanics
- Geodetic Coordinate Systems
- 2-D Seismic Interpretation
- 3-D Seismic Interpretation
- Petrophysical Evaluation
- Interpretation of Well Logs
- Reservoir Geology
- Reservoir Geophysics
- Exploration Geostatistics
- Exploratory and Delineation Drilling
- Exploration Process
- Project Economics, Risk, and Uncertainty Analysis
- Value of Information

Stage III
Industry Sector Training

Learning Summary: Stage III

	COURSES	LEARNING HOURS
SEISMIC ACQUISITION	10 COURSES	47 HRS
SEISMIC INTERPRETATION	11 COURSES	61 HRS
SEISMIC PROCESSING	10 COURSES	42 HRS

SEISMIC ACQUISITION

IPIMS Background Learning e-Learning

- Surveying and Mapping on Land
- Positioning and Mapping at Sea
- Multiple Coverage
- Array Design
- Vibroseis
- Choosing the Field Variables
- Quality Control in the Field

IPIMS Action Learning e-Learning

- Seismic Data Acquisition
- Geophysical Instrumentation
- Seismic Survey Design

SEISMIC INTERPRETATION

IPIMS Background Learning e-Learning

- Classic Sequence Stratigraphy
- Stratigraphic Disciplines and Sequence Stratigraphy
- Structural Geology
- Hydrocarbon Indicators
- Seismic Stratigraphic Modeling
- Microseismic Studies of Reservoirs
- Integrated Reservoir Characterization

IPIMS Action Learning e-Learning

- Wellbore Seismic
- 2-D Seismic Interpretation
- 3-D Seismic Interpretation
- Seismic Attributes and Direct Hydrocarbon Indicators (DHI)

SEISMIC PROCESSING

IPIMS Background Learning e-Learning

- Initial Processes
- Velocities
- Static Corrections
- Deconvolution
- Stacking, Filtering and Display
- Seismic Migration
- Synthetic Seismogram Modeling

IPIMS Action Learning e-Learning

- Geophysical Instrumentation
- Seismic Survey Design
- Seismic Data Processing

Stage III
Industry Sector Training

Learning Summary: Stage III

	COURSES	LEARNING HOURS
PETROPHYSICS	5 COURSES	40 HRS
WELLSITE GEOLOGY	14 COURSES	85 HRS

PETROPHYSICS

IPIMS Action Learning e-Learning

- Rock Properties and Mechanics
- Petrophysical Evaluation
- Interpretation of Well Logs
- Data Logging and Geological Information
- Value of Information

WELLSITE GEOLOGY

IPIMS Background Learning e-Learning

- Production Technology
- Cased Hole Logging
- Drilling Fluids and the Circulating System
- Drilling Problems and Drilling Optimization
- Sampling and Analysis of Drilled Cuttings
- Mud Logging

IPIMS Action Learning e-Learning

- Sedimentology
- Geodetic Coordinate Systems
- Petrophysical Evaluation
- Interpretation of Well Logs
- Reservoir Geology
- Geological Operations and Logistics
- Data Logging and Geological Information
- Exploratory and Delineation Drilling

Stage III
Industry Sector Training

Learning Summary: Stage III

	COURSES	LEARNING HOURS
DRILLING ENGINEERING	22 COURSES	126 HRS
PRODUCTION ENGINEERING	17 COURSES	89 HRS

DRILLING ENGINEERING

IPIMS Background Learning e-Learning

- Geosteering: Fundamentals, Planning, and Implementation
- Drill String Components
- Drill Bits
- Drilling Fluids and the Circulating System
- Directional and Horizontal Drilling
- Underbalanced Drilling
- Drilling Problems and Drilling Optimization
- Deepwater Drilling
- Sampling and Analysis of Drilled Cuttings
- Mud Logging

IPIMS Action Learning e-Learning

- Economic Evaluation
- Permitting for Well Operations
- Health, Safety, and Environment
- Contracts
- Drilling and Workover Fluids
- Drilling and Workover Hydraulics
- Cementing
- Initial Well Planning
- Well Design
- Drilling Program Planning and Implementation
- Drilling Operations
- Well Completion Operations

PRODUCTION ENGINEERING

IPIMS Background Learning e-Learning

- Fluid Separation and Treatment
- Intelligent Completions
- Acidizing and Other Chemical Treatments
- Hydraulic Fracturing
- Sand Control
- Natural Gas Fluid Properties
- Oil and Gas Pipelines
- Gas Well Testing
- Oil Well Testing

IPIMS Action Learning e-Learning

- Economic Evaluation
- Health, Safety, and Environment
- Contracts
- Flowing Well Performance and Production System Analysis
- Artificial Lift Methods
- Well Stimulation and Sand Control
- Workover Planning and Operations
- Surface Production Operations

Stage III
Industry Sector Training

Learning Summary: Stage III

	COURSES	LEARNING HOURS
RESERVOIR ENGINEERING	28 COURSES	170 HRS

RESERVOIR ENGINEERING

IPIMS Background Learning e-Learning

- Intelligent Completions
- Acidizing and Other Chemical Treatments
- Hydraulic Fracturing
- Sand Control
- Reservoir Environments and Characterization
- Improved Recovery Processes
- Reservoir Modeling and Reserves Evaluation
- Issues in Reservoir Management
- Integrated Reservoir Characterization
- Gas Well Testing
- Oil Well Testing
- Advanced Pressure Transient Analysis

IPIMS Action Learning e-Learning

- Reservoir Rock and Fluid Properties
- Reservoir Drive Mechanisms
- Wireline Well Logging
- Well Log Quality Control
- Well Log Interpretation
- Pressure/Production Data Analysis
- Flow Unit Determination
- Reservoir Simulation
- Petrophysical Model Updating
- Reservoir Model Updating
- Economic Evaluation
- Reservoir Management and Control
- Improved Recovery
- Implementation of Reservoir Development Strategies
- Reservoir Surveillance and Control
- Contracts

Stage III
Industry Sector Training

Learning Summary: Stage III

	COURSES	LEARNING HOURS
GEOSCIENCE MANAGEMENT	25 COURSES	142 HRS
PETROLEUM ENGINEERING MANAGEMENT	23 COURSES	126 HRS

GEOSCIENCE MANAGEMENT

IPIMS Action Learning e-Learning

- Geological Operations and Logistics
- Data Logging and Geological Information
- Exploratory and Delineation Drilling
- The Exploration Process
- Project Economics, Risk and Uncertainty Analysis
- Value of Information
- Exploration Business Management
- Exploration Project Management
- Strategic Scenario Planning and Business Analysis
- Exploration Project Best Practices and Procedures
- Corporate Portfolio Management
- Portfolio Performance Optimization
- Environmental Impact Evaluation

Business Essentials e-Learning

- Performance Management
- Talent Management and Career Development
- Ethics, Employee Rights, and Discipline
- Employee Health and Safety
- Introduction to Project Management
- Project Processes and Project Integration Management
- Project Scope Management
- Project Time Management
- Project Cost Management
- Project Quality Management
- Project Communications Management
- Project Risk Management

PETROLEUM ENGINEERING MANAGEMENT

IPIMS Action Learning e-Learning

- The Exploration Process
- Project Economics, Risk and Uncertainty Analysis
- Value of Information
- Exploration Business Management
- Exploration Project Management
- Strategic Scenario Planning and Business Analysis
- Exploration Project Best Practices and Procedures
- Corporate Portfolio Management
- Portfolio Performance Optimization
- Environmental Impact Evaluation
- Contracts

Business Essentials e-Learning

- Performance Management
- Talent Management and Career Development
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- Introduction to Project Management
- Project Processes and Project Integration Management
- Project Scope Management
- Project Time Management
- Project Cost Management
- Project Quality Management
- Project Communications Management
- Project Risk Management

IHRDC e-Learning Solutions Product Series

Oil & Gas Business

The Petroleum Online series covers the entire oil and gas value chain and provides a comprehensive overview of the oil and gas industry. It is ideal for those who seek a solid foundation in oil and gas industry business fundamentals.

Upstream Technology

IPIMS is designed for technical staff working in the Exploration and Production (E&P) sector, and these courses enhance their knowledge of the best practices and theories in the industry. It provides two levels of instruction and covers geology, geophysics, petroleum engineering, drilling, formation evaluation, reservoir engineering, and production.

Operations & Maintenance

These courses provide the tools and knowledge that operators and maintenance technicians need to run plants safely and effectively. The courses can be organized in a competency-based approach to ensure workers perform their jobs properly. They cover relevant theories, plant processes, equipment, maintenance, and operations.

Business Essentials

The MBA-level e-Learning courses in key business management areas explore finance, communications, human resource management, project management, marketing, innovation, risk management, and sustainable management. They are tailored to meet the needs of oil and gas industry professionals and developed in partnership with a leading Boston-based business school.

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