A Word from the CEO
Jean-Luc Karnik

Our roots, our history
2019 is the 100th anniversary of the first oil training in France at the Pechelbronn field site, as well as the creation of the first oil laboratory, ancestors of the IFP and IFP School. A century later, IFP, now IFP Energies nouvelles, is recognized worldwide for its action and success in developing technologies and talents in the energy sector.

IFP Training, a subsidiary within the IFP group, was founded in 1975 to develop the skills of professionals in the Oil & Gas industry and now offers courses in fields as varied as exploration, production, refining, chemicals, the powertrain industry, energy transition, economics and management.

In addition to the “catalogue” training courses presented below, the core of the activity concerns tailor-made courses to customize the development of our clients’ teams, whether they are operators, engineers or managers.

In total, more than 15,000 professionals from 80 countries are trained each year through 1,400 training sessions.

Addressing our industry’s new challenges

Although the global demand for hydrocarbons increases, the high price volatility and geopolitical instability in some regions have a significant impact on the development of our industry, which can also be measured in the area of recruitment and training. In particular, there is a strong trend towards internalization and catalogue training courses are becoming commodities.

In addition, the new generations express high expectations often linked to the emergence of new training methods or new digital tools. They expect interactivity, practice and immediate impact of the training.

As a result, training is now seen as an investment in skills development, a guarantee of employability for employees and operational efficiency and enhanced safety for companies.

Our solutions

In this context, IFP Training develops a range of high value-added services and solutions and offers a skills management system, from evaluation to certification, guaranteeing a return on investment as well as a quality guarantee.

Close relations have been established with major players in the energy sector, particularly in Africa, Latin America, Europe, the Middle East and Russia. For example, we have partnered with TOTAL to offer training on real size industrial units to develop know-how and interpersonal skills.

I encourage you to read in the following pages about the resources and methods implemented, from our policy of pedagogical innovation and quality, our professionalization paths, our rich offer of training leading to certification, our competency assessment system to our global approach to accreditation.

Our teams and, in particular, our 100 permanent instructors and 600 industry experts are at your disposal to offer you high added value services and enable you to succeed in your projects.

Jean-Luc Karnik
Chief Executive Officer
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Tuition fees include instruction and documentation as well as meals and beverage breaks.
## Downstream Economics

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*Tuition fees include instruction and documentation as well as meals and beverage breaks.*
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www.ifptraining.com
The International Oil Summit is an annual gathering of Energy and Oil Ministers, Heads of international organizations (IEA, OPEC, IEF...), CEOs and key industry leaders, from IOCs, NOCs and petroleum service sector, to discuss the most relevant issues of the oil sector.

**AGENDA**

Over the past years, the Summit has been the circle for policy makers and industry leaders to exchange views on ways and means to address a large spectrum of oil related issues; securing investment and meeting future oil demand, making successful arrangements leading to long lasting partnerships between NOCs and IOCs, addressing oil market volatility and its effects on investment, debating human resources related issues, improving dialogue among producing and consuming countries, and between oil and service companies on project management and risk sharing.

The Summit also look at avenues to successfully do business and implement sustainable energy policies in an increasingly carbon-constrained world, discuss the role of technology in meeting present and future energy security objectives.

**SPEAKERS**

The genuine debate in the Paris International Oil Summit has tremendously benefited from the participation of high caliber speakers. Past editions of the International Oil Summit welcomed Energy and/or Oil Ministers of Algeria, India, Iran, Iraq, Nigeria, Norway, Qatar, Saudi Arabia, United Arab Emirates, Venezuela... as well as CEOs and leaders from the petroleum industry such as Anadarko, BP, Chevron, CGG, Halliburton, Hellenic Petroleum, IFP Energies Nouvelles, Perenco, Petrobras, Repsol, Saudi Aramco, Schlumberger, Shell, Sonatrach, Statoil, Total, TechnipFMC, Vallourec, Saipem, etc.

**WHY ATTEND?**

The Summit is the only few gatherings bringing together Ministers, oil and service industry leaders to discuss the most important and relevant issues of the day. It allows policy makers and industry leaders to share concerns and objectives, thus narrowing gaps between energy policies and industry strategies.

Participation in the Summit provides also an excellent opportunity for meetings, discussions and networking among attendees.

The Summit enjoys also excellent media coverage; some 50 journalists attend each year echoing oil industry concerns and views.

**SPONSORSHIP**

The International Oil Summit offers sponsors a unique opportunity in which they can increase their brand visibility amongst the key decision makers and main players of the petroleum sector, the press, influencers and other stakeholders. We have developed a range of packages designed for all budgets, with a range of benefits and avail ourselves to discuss details with our interested sponsors.
International Gas & Power Summit

Jointly organized with IFP Énergies nouvelles & Petrostrategies

The International Gas and Power Summit is an annual high level event gathering key gas and power industry executives as well as policy makers, to discuss the most timely and relevant issues affecting the gas and power sectors.

AGENDA

Over the past years, the Summit has been the circle for policy makers and industry leaders to exchange views on ways and means to address a large spectrum of gas and power related issues and challenges; gas markets development, LNG trade and regional competition, regulatory framework shifts, players’ strategies, future gas and power demand and investment needs, ageing generation capacity, incorporation of growing share of renewables in the energy mix, adjusting to international and national-level climate and energy policies, and other exogenous impacting factors.

The Summit also look at avenues to successfully do business and implement sustainable energy policies in an increasingly carbon-constrained world, and discuss the role of technology in meeting present and future energy security objectives.

SPEAKERS

The genuine debate in the Paris International Gas and Power Summit has tremendously benefited from the participation of high caliber speakers. Past editions of the International Gas and Power Summit welcomed officials, including Ministers, from Algeria, Qatar, Norway, Egypt… as well as Cedigaz, Cheniere, Dunkirk LNG, Engie, GECF, Hoegh LNG, IEA, NIOC, Saipem, Statoil, TechnipFMC, Tellurian Investments, Total, Sonatrach, Qatar Petroleum, Uniper, and many others.

WHY ATTEND?

The Gas and Power Summit is the only few gatherings bringing together Ministers, gas and power industry leaders to discuss the most important and relevant issues of the day. It allows policy makers and industry leaders to share concerns and objectives, thus narrowing gaps between energy policies and industry strategies. Participation in the Summit provides also an excellent opportunity for meetings, discussions and networking among attendees. The Summit enjoys also excellent media coverage; some 50 journalists attend each year echoing oil industry concerns and views.

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Reference: PEH/IGS
Contact: em.contact@ifptraining.com
Upstream Economics & Management

Course Content

15 days

MODULE 1: UPSTREAM ECONOMIC & CONTRACTUAL FRAMEWORK

Upstream economic environment 1d

Contractual & fiscal framework of upstream projects 4d
Concession and production sharing contracts: principles, examples of tax regimes and case studies. Risk-service contracts and technical assistance contracts. Objectives of a flexible and progressive tax system, flexible taxation terms. General structure of Exploration-Production contracts. Exploration phase: duration, commitments, surrender, data and information, etc. Appraisal phase: work program, gas provisions, commerciality, etc. Development phase: financing, State participation, budgets and development plans, unitization, etc. Production phase: work conduct and supervision, audit and accounting, financing, taxation, transportation and marketing of production, hydrocarbon price determination, etc. General terms & conditions: title transfer, force majeure, governing law and dispute resolution. Main legal provisions in a Joint Operating Agreement, and Farm in/Farm out agreement.

MODULE 2: UPSTREAM PROJECT ECONOMICS

Economic analysis of E&P projects 4d
Cost of capital and discount rate, value creation. Economic criteria for project evaluation: net present value (NPV), internal rate of return (IRR), payback period, etc. Global profitability analysis, the impact of taxation and inflation on economic indicators. Specific method to Exploration & Production: shadow interest. Equity profitability analysis.

Risk analysis of E&P projects 1d
Introduction to risk analysis and risk discount rate: sensitivity analysis, Spider and Tornado diagrams. Probability of success, economic risk analysis in oil exploration. Economic study of an exploration project using Min, Mode and Max scenarios. Impact of “ringfencing” and the state participation in the decision-making process.

MODULE 3: UPSTREAM ACCOUNTING & FINANCES 5 DAYS


Reference: EAM/UEM | Only available as an In-House course.
Contact: em.contact@ifptraining.com

Level: FOUNDATION

Purpose
This training aims to provide participants with a clear view of the contractual and economic framework of Exploration & Production in order to apprehend the tools for decision making, financial management and auditing.

Audience
This course is designed for managers from the upstream sector who require a global picture of all the economic, financial and contractual aspects of exploration and production activities.

Learning Objectives
Upon completion of this course, participants working in the upstream sector will be able to:
- evaluate all aspects of taxation and the contracts used,
- build advanced economic models for the economic evaluation of projects,
- analyze the economic results and conduct sensitivity analysis,
- incorporate the geological risks and uncertainties in the economic evaluation of projects,
- analyze the main corporate financial statements (profit/loss and balance sheets) issued by oil companies.

Ways & Means
- Case studies simulated on computers.
- Development of an oil field (under concession and production sharing agreements).
- LNG plant project with specific financing.
- Impact of “ringfencing” and the state participation in the decision making process.
- Valuation of a decision to acquire information (seismic or drilling).
- Pricing of an exploration block.
- Analysis and construction of balance sheets, income statements and key financial statements of an Oil & Gas company.
- Examples of petroleum laws & fiscal regimes around the world (Northwestern Europe, North Africa, West Africa, Middle East, Asia-Pacific, etc.).

Learning Assessment
Participants will be evaluated during the training through quizzes and case studies.

Prerequisites
Participants need to be comfortable with Microsoft Excel.

Expertise & Coordination
Contracted IFP Training trainers having expertise and industrial experience in economics, finance and auditing of exploration-production activities.
Contractual Framework of Exploration-Production

Level: FOUNDATION

Purpose
To provide participants with a good understanding of the shape and dynamics of Oil & Gas Exploration-Production contracts.

Audience
Professionals from the E&P sector and managers who need a practical understanding of all the concepts, principles and rules of Oil & Gas patrimonial contracts between host countries and international oil companies.

Learning Objectives
Upon completion of the course, participants will be able to:
- identify the key issues and constraints in the contractual negotiations between host countries, NOCs and IOCs,
- categorize the different tax systems and contractual frameworks in existence,
- identify the main contractual and fiscal clauses of E&P contracts.

Ways & Means
- Comparative reading on a HC law and a E&P contract.
- Exercises on rent sharing.
- Examples of petroleum laws & fiscal regimes around the world.

Learning Assessment
Participants will be evaluated during the training through quizzes and case studies.

Prerequisites
No prerequisites for this course.

Expertise & Coordination
Contracted IFP Training trainers having expertise and experience in the legal framework of exploration-production activities.

Course Content

LEGAL FRAMEWORK
0.5 d
- Objectives of actors, role of national oil companies, stakes in E&P.
- Principles of rent sharing, property of hydrocarbons and State sovereignty.
- Procedure for contracts awarding, different regimes and petroleum laws in the world.
- Legal approach of petroleum law conception and implementation.

CONTRACTUAL & FISCAL FRAMEWORK
1 d
- Main evolutions in contractual relationships.
- Concessions contracts: principles, State’s revenues, examples of tax regimes and case studies.
- Production sharing contracts: principles, examples, of tax regimes and case studies.
- Risk-service contracts and technical assistance contracts.
- Fiscal and non-fiscal constraints.
- Objectives of a flexible and progressive tax system.
- Exercise: comparison of concession and production sharing contracts.
- Case study: comparative reading between a HC law and an E&P contract.

MAIN ARTICLES OF E&P CONTRACTS
1 d
- General structure of patrimonial contracts.
- Exploration phase: duration, commitments, surrender, data and information, etc.
- Appraisal phase: work program, gas provisions, commerciality, etc.
- Development phase: financing, State participation, budgets and development plans, unitization, etc.
- Production phase: work conduct and supervision, audit and accounting, financing, taxation, transportation and marketing of production, hydrocarbon price determination, etc.
- General terms & conditions: title transfer, sole risk, force majeure, local content, environmental protection, governing law and dispute resolution.
- Conclusion: recent trends in oil taxation and patrimonial contracts.

JOINT OPERATING AGREEMENTS
0.5 d
- Main legal provisions in a Joint Operating Agreements (JOA).
- Other agreements: JSBA (Joint Study & Bidding Agreement), unitization, farm-in/farm-out.

Reference: EAM/CFEP
Can be organized as an In-House course.
Contact: em.contact@ifptraining.com

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This course is also available in French: EAM/CCEP. Please contact us for more information.

www.ifptraining.com
Production Sharing & Joint Operating Agreements

Level: PROFICIENCY

Purpose
To provide participants with an in-depth understanding of the concepts, mechanisms and articles of Production Sharing and Joint Operating Agreement.

Audience
Exploration and production professionals, legal personnel entering the E&P scene, service companies managers and government employees.

Learning Objectives
Upon completion of the course, participants will be able to:
- identify the main concepts, principles and articles of a Production Sharing Agreement which contractually binds petroleum companies with a ministry and/or a state oil company.
- evaluate the management of Petroleum Exploration and Production partnerships to successfully find and produce hydrocarbons.
- discuss the practical aspect of contracts: identifying key issues, understanding constraints and deadlines, getting familiar with the document.

Ways & Means
- Case studies.
- Exercises on Production Sharing Contracts.
- Analysis of Joint Operating Agreements.
- Examples of petroleum laws and fiscal regimes around the world.

Learning Assessment
Participants will be evaluated during the training through quizzes and case studies.

Prerequisites
Basic knowledge of the contractual environment of E&P.

Expertise & Coordination
Contracted IFP Training trainers having expertise and experience in the legal framework of exploration-production activities.

Course Content

3 days

PRODUCTION SHARING AGREEMENTS (PSA) 1 d
Introduction
- Origins, concept and scope of the PSA.
- Comparison of PSA to other contracts.
- Contents and structure of a typical PSA.
PSA mechanisms
- Cost oil, profit oil split, “Government Take”.
- Bonuses, first tranche petroleum, tax holiday, cost recovery ceilings, uplifts, investment credits, government “back-in”.
- Typical PSA cash flow forecast chart.
Case study: comparative reading of a mining law and a PSC.

MAIN ARTICLES OF AN E&P CONTRACT 1 d
General structure of patrimonial contracts.
- Exploration phase: duration, commitments, surrender, data and information, etc.
- Appraisal phase: work program, gas provisions, commerciality, etc.
- Development phase: financing, State participation, budgets and development plans, unitization, etc.
- Production phase: work conduct and supervision, audit and accounting, financing, taxation, transportation and marketing of production, hydrocarbon price determination, etc.
- General terms & conditions: title transfer, sole risk, force majeure, local content, environmental protection, governing law and dispute resolution.
- Conclusion: Recent trends in oil taxation and patrimonial contracts.
- Real-life examples from the news.

JOINT OPERATING AGREEMENTS (JOA) 1 d
Introduction:
- The purpose of the joint ventures and use of a JOA.
- The relationship of the JOA to other oil industry contracts.
- Structure of a JOA, definitions and terminologies.
The operator: appointment, rights and duties, liabilities, responsibilities, resignation, removal.
The partners:
- Rights and duties, liabilities, responsibilities.
- The operating committee and sub committees.
- Establishment, powers and duties, notices, voting procedures, impact of voting, pass-mark.
Case study: discussing the main articles of a selected Joint Operating Agreement (JOA).

Reference: EAM/PSA

Contact: em.contact@ifptraining.com

This course is also available in French: EAM/CPA. Please contact us for more information.
Negotiation of Exploration-Production Contracts

Course Content

4 days

REMINDER OF CONTRACTUAL & FISCAL FRAMEWORK OF EXPLORATION-PRODUCTION 0.5 d
Concession, Production Sharing Agreement, Service Contracts.
Analysis of the contract contents’ analysis.
Distribution of the different items into homogeneous “bundles”: clauses related to the exploration stage, clauses conducting operations, clauses related to economic and tax calculations, to pure legal issues, to financial terms, etc.
Important clauses of a contract to prepare a negotiation.

REMINDER OF ECONOMIC EVALUATION OF E&P PROJECTS 0.5 d
Cost of capital and discount rate, value creation.
Economic criteria for project evaluation: net present value (NPV), internal rate of return (IRR), payback period, etc.
Global profitability analysis, the impact of taxation and inflation on economic indicators.

NEGOTIATION SKILLS 0.5 d
Negotiation principles: methodology and techniques.
Preparation for negotiating: principles, economic reminders, technical reminders (reserves, etc.).

ROLE PLAY 2.5 d
Case study preparation per team (Joint Venture: JV, State).
Preparation for the first round of negotiation (contact and consultation).
First simulation and debriefing, updating the negotiation plan.
Preparation for the second round of negotiation (confrontation and early conciliation).
Second simulation and debriefing, updating the negotiation plan.
Preparation for the third round of negotiation (construction of the agreement and conclusion).
Third simulation and debriefing.
Preparation of the report to the management and presentation.

Ways & Means
Simulation of a negotiation (role play where each stakeholder is played by a different team) allowing real-life negotiation case.

Learning Assessment
Participants will be evaluated during the training through quizzes and case studies.

Prerequisites
Basic knowledge of the contractual environment of E&P.

Expertise & Coordination
Contracted IFP Training trainers having expertise and experience in the negotiation of exploration-production contracts.

Reference: EAM/EPCN
Can be organized as an In-House course.
Contact: em.contact@ifptraining.com

Location Start Date End Date Tuition Fees
Rueil 21 May 24 May €4,100

This course is also available in French: EAM/CNEP. Please contact us for more information.
# Operating under “Local Content”

**Level:** PROFICIENCY

**Purpose**
To master the implications of Local Content provisions over the execution of an oil field development project, mainly in terms of procurement and personnel management.

**Audience**
Managers from the Oil & Gas public sector (NOCs, regulation authorities, ministries) or from IOCs having to deal or operate under a “Local Content” environment and contractual provisions.

**Learning Objectives**
Upon completing the course, participants will be able to:
- identify the key-factors in the Local Content provisions applicable to a given contractual context, and assess their impact over the execution of an oil field development project,
- participate in the elaboration of a Local Content Management Plan,
- take part in a procurement contract tendering, negotiation and follow-up,
- take into account the impacts of LC provisions on workforce management.

**Ways & Means**
- Course delivered by experts in the field of Local Content management in the Oil & Gas business.
- Practical case study on a procurement contract.

**Learning Assessment**
Participants will be evaluated during the training through quizzes and case studies.

**Prerequisites**
Bachelor degree with a 5-year experience minimum at a management level in the fields of engineering, law, finance or economics in the upstream Oil & Gas industry; a good knowledge of the various project phases of an oil field development would be a plus.

**Expertise & Coordination**
Contracted IFP Training trainers having expertise and experience in upstream project execution.

## Course Content

<table>
<thead>
<tr>
<th>Topic</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHAT IS “LOCAL CONTENT”?</td>
<td>0.5 d</td>
</tr>
<tr>
<td>Context and current overview. Typology of Local Content provisions applicable in the Oil &amp; Gas business: goods and services, workforce, know-how and technology transfer. Challenges and opportunities.</td>
<td></td>
</tr>
<tr>
<td>THE LOCAL CONTENT MANAGEMENT PLAN (LCMP)</td>
<td>1 d</td>
</tr>
<tr>
<td>Contractual strategy. Key-factor and associated risks. Setting up and management of a LCMP.</td>
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</tr>
<tr>
<td>CONSEQUENCES OF LC PROVISIONS ON THE EXECUTION OF A PROCUREMENT CONTRACT</td>
<td>1 d</td>
</tr>
<tr>
<td>Contractual strategy including impact on Oil &amp; Gas contracts. Tendering process. Recommendation and awarding. Execution - Control. Links with maintenance and exploitation.</td>
<td></td>
</tr>
<tr>
<td>IMPACT OF LC PROVISIONS ON WORKFORCE MANAGEMENT</td>
<td>0.5 d</td>
</tr>
<tr>
<td>Employment. Training and education.</td>
<td></td>
</tr>
</tbody>
</table>

**Reference:** EAM/CLC Only available as an In-House course. This course is also available in French: EAM/CLC. Please contact us for more information.

**Contact:** em.contact@ifptraining.com
# Oil fields unitization

**Level:** PROFICIENCY

## Purpose

To provide the participants with a comprehensive overview of the various parameters at stake in an oil field unitization project using real-case examples, in order for them to be able to take part in negotiations for oil field unitization contracts.

## Audience

Managers from the public and the private sector with a minimum 5-year experience in technical or functional positions in the upstream Oil & Gas sector, having to deal with unitization cases or projects.

## Learning Objectives

Upon completing the course, participants will be able to:

- Explain the various factors at stake in the case of an unitization project, both on a national perspective (cross permit) and a transnational perspective (cross country),
- Have a critical approach to the main provisions at stake in a unitization contract,
- Choose the best suitable type of contract,
- Take part in a negotiation team for unitization.

## Ways & Means

- Real-case studies.
- Feedbacks from experts in the field of unitization.

## Learning Assessment

Participants will be evaluated during the training through quizzes and case studies.

## Prerequisites

Basic knowledge of the contractual framework of E&P and its main provisions.

## Expertise & Coordination

Contracted IFP Training trainers having expertise and experience in oil field unitization.

## Course Content

<table>
<thead>
<tr>
<th>Topic</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INTRODUCTION</strong>&lt;br&gt;Context - Stakes.&lt;br&gt;Overview of current unitized oil developments.</td>
<td>0.25 d</td>
</tr>
<tr>
<td><strong>RESERVES DEVELOPMENT UNDER AN UNITIZATION PROJECT</strong>&lt;br&gt;Principles.&lt;br&gt;Stakes and key factors.&lt;br&gt;Consequences in terms of development schemes.</td>
<td>0.25 d</td>
</tr>
<tr>
<td><strong>UNITIZATION IMPLICATIONS</strong>&lt;br&gt;Political aspects.&lt;br&gt;Contractual aspects.&lt;br&gt;Economic aspects.&lt;br&gt;Fiscal aspects.</td>
<td>0.5 d</td>
</tr>
<tr>
<td><strong>STRUCTURE OF AN UNITIZATION CONTRACT</strong>&lt;br&gt;Main provisions.&lt;br&gt;Cross country case:&lt;br&gt;The boundary question.&lt;br&gt;Various types of contracts: unitization, commercial agreement, joint development area.&lt;br&gt;Study case based on real-case examples.</td>
<td>1 d</td>
</tr>
<tr>
<td><strong>CASE STUDIES BASED ON RECENT UNITIZED DEVELOPMENT CASES</strong></td>
<td>1 d</td>
</tr>
</tbody>
</table>

This course is also available in French: EAM/UNIT. Please contact us for more information.

Reference: EAM/UNITZ

Only available as an In-House course.
# Economic Framework of Exploration-Production

**Level**: FOUNDATION  

**Purpose**  
To allow the participants to get familiar with the use of decision-making tools in the field of E&P projects economics and financial analysis.

**Audience**  
Engineers and commercial staff who need to extend their understanding of the economic and financial aspects of the upstream sector.

**Learning Objectives**  
Upon completion of the course, participants will be able to:
- explain the economic, technical and fiscal aspects of E&P activities,
- evaluate the economic profitability of a simplified E&P project and assess its key sensitivity parameters,
- analyze the main corporate financial statements (profit/loss and balance sheet) issued by oil companies.

**Ways & Means**  
- Case studies simulated on computers.
- Development of an oil field (under concession and production sharing agreements).
- Acceleration of production project with or without EOR (Enhanced Oil Recovery).
- Valuation of a decision to acquire information (seismic or drilling).
- Pricing of an exploration block.
- Analysis and construction of balance sheets, income statements and key financial statements of an Oil & Gas company.

**Learning Assessment**  
Participants will be evaluated during the training through quizzes and case studies.

**Prerequisites**  
No prerequisites for this course.

**Expertise & Coordination**  
Permanent IFP Training trainers having expertise in upstream project economic evaluation.

## Course Content

### 5 days

<table>
<thead>
<tr>
<th>UPSTREAM ECONOMIC ENVIRONMENT</th>
<th>0.5 d</th>
</tr>
</thead>
</table>
| Economic development of the upstream sector.  
Various actors in Exploration-Production and their strategies. Oil markets and prices.  
Current Exploration and Production activities.  
Levels of investment.  
Examples of finding, development and production costs. |

<table>
<thead>
<tr>
<th>CONTRACTUAL &amp; FISCAL ENVIRONMENT</th>
<th>0.5 d</th>
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</thead>
</table>
| General principles of oil tax systems.  
Legal framework: concessions agreements, production sharing contracts, service contracts.  
Impact of various contractual and technical parameters.  
Sharing of the economic rent between the State and oil companies. Economic flexibility.  
Legal aspects of joint ventures.  
Main legal provisions in a Joint Operating Agreement (JOA). |

<table>
<thead>
<tr>
<th>ECONOMIC EVALUATION OF E&amp;P PROJECTS</th>
<th>2 d</th>
</tr>
</thead>
</table>
| Cost of capital and discount rate, value creation.  
Economic criteria for project evaluation: net present value (NPV), internal rate of return (IRR), payback period, etc.  
Global profitability analysis, the impact of taxation and inflation on economic indicators.  
Case studies: development of an oil field (under concession and production sharing agreements).  
Introduction to risk analysis and risk discount rate: sensitivity analysis, Spider and Tornado diagrams.  
Probability of success, economic risk analysis in oil exploration.  
Economic study of an exploration project using Min, Mode and Max scenarios.  
Case studies: valuation of a decision to acquire information (seismic or drilling) and pricing of an exploration block. |

<table>
<thead>
<tr>
<th>UPSTREAM ACCOUNTING &amp; FINANCE</th>
<th>2 d</th>
</tr>
</thead>
</table>
| Financing of Oil & Gas projects. Basic aspects of accounting and financial analysis.  
Special mandatory reporting for oil companies.  
Principles of consolidation.  
Accounting of exploration expenditures, full cost, successful efforts.  
Amortization and depreciation methods, special provisions (depletion allowance…).  
Funds from operations, cash flows, financial equilibrium, working capital.  
Financial statement, return on capital employed, return on equity, financial leverage.  
Cost analysis and budgeting.  
Exploration costs, finding costs, development costs, replacement costs, production costs.  
Capital budgeting, authorizations for expenditure, planning and scheduling, budgeting exploration activities.  
Joint venture accounting, accounting procedures, cash calls, joint venture audit.  
Case study: construction of an E&P company financial statements (simplified). |

### Reference: EAM/EFEP

Can be organized as an In-House course. Contact: em.contact@ifptraining.com

### Location

<table>
<thead>
<tr>
<th>Location</th>
<th>Start Date</th>
<th>End Date</th>
<th>Tuition Fees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rueil</td>
<td>8 April</td>
<td>12 April</td>
<td>€3,690</td>
</tr>
</tbody>
</table>

This course is also available in French: EAM/CEEP. Please contact us for more information.
## Practice of Exploration-Production Contracts Economic Modeling

### Purpose
To provide a practical understanding of the economic modeling of Oil & Gas field development project as well as exploration projects. A number of computer case studies will be treated all along the course to apply the principles that are presented succinctly, which makes this course a very practical one.

### Audience
Managers and executives involved in Exploration-Production activities who need to acquire a deep understanding of fiscal modeling for project evaluation.

### Learning Objectives
Upon completion of the course, participants will be able to:
- explain the critical aspects of taxation and upstream contracts,
- build advanced economic models for the economic evaluation of Exploration-Production projects,
- analyze the economic results and carry out sensitivity analysis,
- incorporate the geological risk and uncertainty in the economic evaluation of E&P projects.

### Ways & Means
Case studies simulated on computers.

### Learning Assessment
Participants will be evaluated during the training through quizzes and case studies.

### Prerequisites
Participants need to be comfortable with the use of Microsoft Excel.

### Expertise & Coordination
Contracted IFP Training trainers having expertise and experience in upstream project economic modeling.

### Course Content

<table>
<thead>
<tr>
<th>Topic</th>
<th>Duration</th>
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</thead>
<tbody>
<tr>
<td><strong>CONTRACTUAL &amp; FISCAL FRAMEWORK OF EXPLORATION-PRODUCTION</strong></td>
<td>0.5 d</td>
</tr>
<tr>
<td>Overview of E&amp;P activities, exploration, development and production costs. General principles of oil taxation. Concession contracts, production sharing contracts and service contracts. Principles of rent sharing between States and oil companies. Case studies: examples of contracts.</td>
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</table>

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</thead>
<tbody>
<tr>
<td><strong>OIL CONTRACT MODELING</strong></td>
<td>2 d</td>
</tr>
<tr>
<td>Cost of capital and discount rate, value creation. Economic criteria for project evaluation: net present value (NPV), internal rate of return (IRR), payback period, etc. Global profitability analysis, the impact of taxation and inflation on economic indicators. Specific method to Exploration and Production: shadow interest. Case studies: development of an oil field (under concession and production sharing agreements). Equity profitability analysis. Case studies: LNG project and gas pipeline project with specific financing.</td>
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<th>Topic</th>
<th>Duration</th>
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<tbody>
<tr>
<td><strong>RISK ANALYSIS OF EXPLORATION-PRODUCTION PROJECTS</strong></td>
<td>0.5 d</td>
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</tbody>
</table>

**CASE STUDIES**
- Development of an oil field (under concession and production sharing agreements).
- LNG plant project with specific financing.
- Impact of “ringfencing” and the state participation in the decision-making process.
- Valuation of a decision to acquire information (seismic or drilling).
- Pricing of an exploration bloc.
Economics & Risk Analysis of Upstream Projects

**Level:** PROFICIENCY

**Purpose**
To provide participants with an in-depth understanding of the tools used in economic analysis and decision-making tools within the upstream industry.

**Audience**
Engineers, economists and project managers who need to extend their understanding of the specific methods used to evaluate Exploration-Production projects.

**Learning Objectives**
Upon completion of the course, participants will be able to:
- carry out investment profitability studies including all aspects of complex fiscal terms, inflation, and financing,
- analyze the economic results and carry out sensitivity analysis,
- incorporate the geological risk and uncertainty in the economic evaluation of Exploration & Production projects,
- develop advanced computer models for the study of Oil & Gas development projects.

**Ways & Means**
- Case studies simulated on computers:
  - Development of an oil field (under concession and production sharing agreements).
  - Impact of “ringfencing” and the state participation in the decision-making process.
  - Valuation of a decision to acquire information (seismic or drilling).
  - Pricing of an exploration bloc.
- Introduction to risk analysis and risk discount rate: sensitivity analysis, Spider and Tornado diagrams.
- Specific method to Exploration and Production: shadow interest.
- Case studies: development of an oil field (under concession and production sharing agreements).
- Evaluation of development projects.
- Economic risk associated with a marginal development.
- Decision trees and subjective probabilities, decision theory.

**Learning Assessment**
Participants will be evaluated during the training through quizzes and case studies.

**Prerequisites**
Participants need to be comfortable with the use of Microsoft Excel.

**Expertise & Coordination**
Contracted IFP Training trainers having expertise and experience in upstream project economics.

**Course Content**

**ECONOMIC & CONTRACTUAL FRAMEWORK OF E&P**
0.5 d
Various phases of Exploration-Production.
- Technical cost, evolution of the economic environment.
- Petroleum Exploration and Production contracts.
- Concessions, production sharing contracts, service contracts.
- Sharing of the economic rent, economic flexibility in petroleum contracts.
- Economic clauses.

**INVESTMENT PROFITABILITY STUDIES**
2 d
Cost of capital and discount rate, value creation.
- Economic criteria for project evaluation: net present value (NPV), internal rate of return (IRR), payback period, etc.
- Global profitability analysis, the impact of taxation and inflation on economic indicators.
- Specific method to Exploration and Production: shadow interest.
- Case studies: development of an oil field (under concession and production sharing agreements).
- Introduction to risk analysis and risk discount rate: sensitivity analysis, Spider and Tornado diagrams.
- Impact of “ringfencing” and the state participation in the decision-making process.

**RISK ANALYSIS OF E&P PROJECTS**
1.5 d
Probability of success, analysis of economic risk in oil exploration.
- Evaluation of exploration projects and decision trees.
- Farm in/Farm out.
- Risked and unrisked economics.
- Case study: economic study of an oil project including Min, Mode and Max scenarios.
- Evaluation of development projects.
- Economic risk associated with a marginal development.
- Decision trees and subjective probabilities, decision theory.

**PORTFOLIO MANAGEMENT**
1 d
Components and determinants of asset valuation at various stages of maturity: exploration and appraisal, development, production.
- Review of methodologies and processes, probabilistic analysis.
- Asset aggregation and portfolio optimization, tools of choice for comparing expected results and budget efficiencies.
- Conclusions, what works and what doesn’t.
- Contribution of risk analysis and management to successful exploration.

**Reference:** EAM/ERA
Can be organized as an In-House course.
Contact: em.contact@ifptraining.com

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>Rueil</td>
<td>14 October</td>
<td>18 October</td>
<td>€3,800</td>
</tr>
</tbody>
</table>

This course is also available in French: EAM/EAR. Please contact us for more information.
Graduate Certificate
Upstream Economist Certification

Level: PROFICIENCY

Purpose
This certifying training aims to provide in-depth knowledge in economics, contracts/taxation and finance in order to hold rapidly and effectively the position of upstream economist.

Learning Objectives
Upon completion of the course, participants will be able to:
- evaluate all aspects of taxation and contracts for upstream assets,
- build advanced economic models for evaluating Exploration-Production projects,
- interpret the different financial statements published by oil companies,

Ways & Means
- Case studies simulated on computers,
- Analyze the main corporate financial statements issued by oil & gas companies.

Learning Assessment
The assessment system is made up of two (02) elements:
- an entry assessment, covering all topics treated during the training in order to measure the progress of the candidates and does not validate any modules.
- in order to sanction the certification, at the end of each module from 1 to 6, participants must pass written/oral exams, lasting one hour and a half.

Prerequisites
Are allowed to take part to this certified training only applicants having:
- a Master's degree or equivalent in engineering, economics or finance,
- an engineering degree.
Applicants must provide proof validating these prerequisites, e.g. (copy of engineering degree, Master, Bachelor Degree or equivalent).

Why an IFP Training Certification?
- An international recognition of your competencies.
- A Graduate Certificate delivered.
- An expertise confirmed in Upstream Economist.
- Ready-to-use skills.

Expertise & Coordination
Contracted IFP Training trainers having expertise and industrial experience in economics, finance and auditing of exploration-production activities.

Course Content

TECHNICAL & ECONOMIC ASPECTS OF THE PETROLEUM INDUSTRY

Module 1: Overview of Oil & Gas chain
International energy scene.
Upstream economics and downstream economics.
Oil trading.

Module 2: Introduction to petroleum engineering
Reservoir engineering.
Well intervention.
Surface facilities.

ECONOMIC MODELING OF EXPLORATION-PRODUCTION CONTRACTS

Module 3: Contractual & fiscal framework of Exploration-Production
Legal, contractual and fiscal framework.
Main clauses of petroleum contracts.
Association agreements.

Module 4: Economic evaluation of Exploration-Production projects
Economic criteria and economic costs analysis.
Equity profitability analysis and project funding.
Risk analysis of exploration-production projects.

FINANCIAL MANAGEMENT OF UPSTREAM ASSETS

Module 5: Upstream accounting & financial management
Accounting standards and consolidated financial statements.
Financial analysis.
Introduction to audit and financial reporting.

Module 6: Governance of an E&P company
Governance of companies.
Audit & Internal control.
Oil & Gas specific issues.
Best practices study.

Reference: EAM/UEC
Only available as an In-House course.
This course is also available in French: EAM/EAC. Please contact us for more information.

Contact: em.contact@ifptraining.com

www.ifptraining.com
Graduate Certificate

Upstream Economics & Management Certification

Level: FOUNDATION

Purpose

This certifying training is part of a professional carrier development to managerial positions in exploration & production business, requiring specific skills in economics, contracts, taxation, finance, auditing and project management.

Learning Objectives

Upon completion of the course, participants will be able to:
- develop negotiation skills in petroleum contracts,
- build advanced economic models for evaluating Exploration-Production projects,
- interpret the different financial statements published by Oil & Gas companies,
- effectively manage the project: engineering studies, procurement, construction and commissioning.

Ways & Means

- Case studies simulated on computers,
- Analyze the main corporate financial statements issued by Oil & Gas companies.
- Cost estimation of Exploration & Production projects.

Learning Assessment

The assessment system is made up of two (02) elements:
- an entry assessment, covering all topics treated during the training in order to measure the progress of the candidates and does not validate any modules,
- In order to sanction the certification, at the end of each module from 1 to 12, participants must pass written/oral exams, lasting one hour and a half.

Prerequisites

Are allowed to take part to this certified training only applicants having:
- a Master’s degree or equivalent in engineering, economics, finance or legal with minimum 2 years working experience,
- a Bachelor’s degree with minimum of 5 years working experience.
Applicants must provide proof validating these prerequisites, e.g. (copy of engineering degree, Master, Bachelor Degree or equivalent).

Why an IFP Training Certification?

- An international recognition of your competencies.
- A Graduate Certificate delivered.
- An expertise confirmed in Upstream Economics & Management.
- Ready-to-use skills.

Expertise & Coordination

Contracted IFP Training trainers having expertise and industrial experience in economics, finance and auditing of exploration-production activities.

Course Content

UPSTREAM ECONOMICS

Module 1: Overview of Oil & Gas chain
International energy scene. Upstream economics. Oil trading. Downstream economics.

Module 2: Introduction to petroleum engineering
Reservoir engineering. Well intervention. Surface facilities.

Module 3: Natural gas chain economics

Module 4: Trading of crude oil & petroleum products

Module 5: Contractual & fiscal framework of Exploration-Production
Legal framework. Contractual and fiscal framework. Main clauses of petroleum contracts.

Module 6: JOA & negotiation of E&P patrimonial contracts
Association agreements. Methodology of negotiation. Simulation: negotiating a PSC.

MANAGEMENT OF UPSTREAM ASSETS

Module 7: Estimation & cost control

Module 8: Economic evaluation of Exploration & Production projects
Economic criteria. Economic costs analysis. Equity profitability analysis and project funding. Risk analysis of Exploration-Production projects.

Module 9: Project management
Introduction to preliminary studies. Feed or basic engineering studies. Project control and administration. HSE and quality management. Detail studies and procurement. Construction.

Module 10: Upstream accounting & financial management

Module 11: Upstream contracts audits

Module 12: Hunting for oil: simulation game of E&P chain
The Hunting For Oil™ (HFO™) course presents a practical overview of the mostly used techniques in of the Upstream Oil & Gas industry, from prospect exploration to field development and production. Participants will learn to select and acquire license blocks, use seismic data, plan drilling activities, develop their field by analyzing technical aspects, and manage the time line, the budget and other critical factors related to field development.

Reference: EAM/EAMC Only available as an In-House course.

Contact: em.contact@ifptraining.com

This course is also available in French: EAM/SAMC. Please contact us for more information.
Upstream Module

Level: PROFICIENCY

Purpose
To gain an understanding of the upstream petroleum sector in its technical, economic and financial dimensions (main technical mechanisms, key economic data and characteristics, management tools, etc.).

Audience
Recently hired professionals, preferably with an engineering background, about to take up a position in upstream petroleum activities.
Staff from other petroleum sectors (refining, chemicals, etc.) taking up an upstream managerial position or from government agencies with responsibilities for petroleum matters will also benefit from this course.

Ways & Means
- Case studies.
- Statistical data.

Prerequisites
No prerequisites for this course.

More info
This module is a part of a 16-month master degree program, Petroleum Economics and Management, run by IFP School.

Expertise & Coordination
Contracted IFP Training trainers having expertise and industrial experience in economics, finance and auditing of exploration-production activities.

Course Content

PRODUCTION & RESERVOIR ENGINEERING 12 d
This part of the course covers the basic techniques used in exploration, development and production. This will enable the participants to communicate with specialists in this field, understand and estimate the validity of the technical data on which economic analyses are based.

GLOBAL ENERGY OUTLOOK 10 d
Energy geopolitics.
Energy issues in the context of policy.
Financial aspects of the petroleum industry.
Evolution of the oil industry.

UPSTREAM MANAGEMENT 11 d
Economic aspects of Oil & Gas Exploration-Production.
Legal and fiscal aspects.
Project financing.

EVALUATION OF PROJECTS 12 d
Economic criteria: discounted cash flow, Internal Rate of Return, profitability index.
Field development case study.
Equivalent cost and long-term marginal cost.
Portfolio management.

FINANCE & ACCOUNTING 10 d
Principles of accounting: case of Oil & Gas companies.
The balance sheet and the income statement and notes.
Financial analysis.
Market value, Price Earnings Ratio.
Statement of cash flow.
Introduction to cost accounting and management control.

EFFICIENCY ANALYSIS OF INDUSTRIAL FIRMS 5 d
Production frontier and economic performances of firms.
Deterministic, stochastic parametric and non-parametric models.

Reference: EAM/UPM
Can be organized as an In-House course.
Contact: em.contact@ifptraining.com

<table>
<thead>
<tr>
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<tr>
<td>Rueil</td>
<td>3 January</td>
<td>5 April</td>
<td>€13,150</td>
</tr>
</tbody>
</table>

www.ifptraining.com
E&P Jobs

Level: DISCOVERY

Purpose
This program aims at introducing E&P activities and providing a comprehensive overview of professions and skills involved throughout Oil & Gas field development projects.

Audience
Non-technical and technical personnel alike, seeking to acquire a global understanding of the E&P chain structure and the professions it involves.

Learning Objectives
Upon completion of the course, participants will be able to:
► identify the various phases and activities of Oil & Gas field development projects,
► list professions and describe skills involved throughout Oil & Gas field development projects lifecycle,
► explain interactions between the various professions involved.

Ways & Means
► Highly interactive course delivered in none-technical language by experts of the E&P industry.
► Numerous examples and feedbacks from the industry.

Learning Assessment
The assessment takes place during the different periods of group work.

Prerequisites
No prerequisites for this course.

Expertise & Coordination
IFP Training trainer (permanent or contracted) having a good expertise and/or experience of the related topics, trained to adult teaching methods, and whose competencies are kept up-to-date.

Introduction to the Oil & Gas Industry - E&P Activities
Scope of the Oil & Gas industry. Stakeholders: producer and consumer countries; national/independent/international oil companies; service companies.
Oil & Gas field life cycle: introduction to E&P activities and workflow from exploration to abandonment.

Geosciences & Reservoir Engineering
Activities: Exploration. Reservoir characterization and modeling. Reservoir engineering.
PVT Technician/engineer. Data management technician/engineer.
Service companies.

Drilling, Well Completion & Well Interventions
Activities: drilling, completion, well intervention and workover.
Professions: Organization of operating and well servicing companies. Drilling: drilling manager, drilling engineer, mud logging engineer/technician, company man… Completion: well completion technician, well engineer, well performance engineer… Well intervention: well intervention engineer/technician, work-over engineer, stimulation engineer…

Production
Professions: Production engineering: operations manager, production engineer/operator, flow assurance engineer, well test technician/operator, well surveillance engineer… Field operations: OIM, field operations engineer, process engineer, production superintendent/supervisor/panel operator/field operator, laboratory engineer/technician… Maintenance: mechanical engineer, method engineer, maintenance superintendent, mechanical/electrical/instrumentation technician…

HSE
HSE activities throughout Oil & Gas project lifecycle.
Professions: HSE manager, safety engineer; process safety engineer; environment engineer; prevention/intervention technician…

Engineering & Project Management

E&P Support Functions

Reference: GENP/EPMETIERGB
Can be organized as an In-House course.

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<td>Rueil</td>
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This course is also available in French: GENP/EPMETIERFR. Please contact us for more information.
Exploration & Production Overview

Level: DISCOVERY

Purpose

This course aims to introduce the fundamentals and vocabulary of Exploration & Production techniques: geosciences, reservoir engineering, drilling, completion, production, projects, decision-making processes, economic aspects and contracts...

Audience

All professionals in contact with the oil industry: directors, ministries, executives, technicians, support trades... wishing to acquire the basic knowledge of oil exploration & production techniques and the associated vocabulary in order to interact effectively with specialists in different disciplines.

Learning Objectives

Upon completion of the course, participants will be able to:
- explain the various phases of Oil & Gas development projects,
- identify the contribution of all experts and technologies involved through a field development project,
- understand the E&P value chain from prospect to market and associated contractual framework,
- describe techniques involved in field development in order to efficiently interact with technical teams.

Ways & Means

- Highly interactive course delivered by experts of the E&P industry.
- Numerous examples and feedbacks from the industry.

Prerequisites

No prerequisites for this course.

More info

Other training duration availability on request.

Expertise & Coordination

IFP Training trainer (permanent or contracted) having a good expertise and/or experience of the related topics, trained to adult teaching methods, and whose competencies are kept up-to-date.

Course Content

Introduction to the Oil & Gas Industry

Introduction to the energy business: energy resources, energy demand and supply.
Scope of the Oil & Gas industry:
Brief history of the Oil & Gas industry.
Context: producer and consumer countries; national/ independent/ international oil companies; services companies; international organizations.
Risks related to the oil and gas industry.

Geosciences & Reservoir Engineering

Introduction to petroleum geology:
Elements and processes of the petroleum system (source, reservoir, seal, traps).
Subsurface models, inputs data and concepts:
Seismic data gathering, processing and interpretation.
Well data acquisition and analysis.
Formation evaluation and sampling (logs and cores).
Reservoir characterization and modeling:
Data integration; introduction to reservoir modeling.
Management of subsurface uncertainties.
Volumetrics (in-place hydrocarbon estimation).
Subsurface Development Options: reservoir engineering:
Field development planning:
Drainage mechanisms: introduction to EOR.
Different types of reservoir effluents and their behavior.

Field Operations & Development

Drilling:
Main functions of drilling rigs: lifting, rotating, pumping, power and safety.
Well architecture.
Well construction.
Drilling equipment: bits, drilling string, drilling fluids...
Drilling techniques: casing, cementing, directional drilling, well testing, instrumentation.
Well control - BOPs (safety devices: wellheads in drilling).
Sampling: measurements during drilling (UWD), coring, mud-logging and wireline, fluid sampling.
Rigs onshore and offshore.
Specificities of offshore equipment.

Well completion:
Reservoir/wellbore interface; basics of well performance; stimulation; artificial lift techniques.

Well equipment and well intervention.

Surface architecture:
Surface development options; study of various existing fields.

Case of offshore developments.

Surface facilities:
Well effluent gathering network.
Oil, gas and water processing.
Metering, storage and export.
Oil & Gas transport through pipelines and tankers.

HSE in field development:
Main hazards in hydrocarbon exploration & production operations.
Overview of safety engineering and environmental impact assessment studies throughout Oil & Gas project life cycle.

Introduction to unconventional developments:
Heavy oils.
Tight & shale Oil & Gas fields.

Oil & Gas Field Development Projects: Decision Making Process, Economics & Legal Framework

Legal framework in E&P: oil contracts and principle of the oil rent sharing.
Project profitability evaluation:
Oil & Gas project economics and financial performance indicators.
Reserve evaluation. Impact of subsurface uncertainty on project economics.
Field development process:


Technical service contracts.

Project control:
Scheduling and planning control.
Cost estimation and control.
Decommissioning.

Serious Game: Oil Field Development Cycle

Reference: GENP/DECOUVEP
Can be organized as an In-House course.

Location Start Date End Date Tuition Fees
Rueil 16 September 20 September €3,570
Rueil 9 December 13 December €3,570

This course is also available in French: GENP/DECOUVERTE. Please contact us for more information.

www.ifptraining.com
Introduction to Petroleum Engineering

Course Content

RESERVOIR ENGINEERING
Geologic traps and characteristics.
Rock and fluids properties, PVT studies.
Logging and well-test evaluation, oil in place estimation.
Drainage mechanisms, recovery factor.
Improved oil recovery notions.

WELL
Drilling:
Organization on site.
Well design.
Drilling rig: functions hoisting, rotations, pumping, power and safety.
Drilling rigs.
Drilling operations chronology.
Drilling operations: casing, cement job, directional drilling, fishing, D.S.T.
Drilling rig visit*.
Downhole production/completion:
Completion design.
Reservoir-wellbore interface.
Well stimulation.
Well equipment and maintenance.
Activation.
Offshore wells:
Selection of the drilling and production rigs - Platforms.
Design and specific equipment.

OIL & GAS PROCESSING FACILITIES
Produced fluid properties.
Gathering system, hydrate inhibition.
Crude oil treatment: separation, crude oil dehydration and desalting processes.
Gas processing: dehydration, sweetening, NGL recovery processes.
Metering and shipment.
Visit of a production site (if available)*.

Level: DISCOVERY
Purpose
This course provides a complete overview of petroleum engineering covering primary issues of reservoir, drilling, completion and surface production.

Audience
Professionals in technical, commercial, legal, financial or human resources departments, within the petroleum industry or related sectors, who need a general knowledge in petroleum engineering.

Learning Objectives
Upon completion of the course, participants will:
► know about major issues in petroleum engineering,
► understand the various operations carried out during field development, from drilling to surface treatment,
► know the vocabulary needed to communicate with E&P professionals.

Ways & Means
► Interactive animation by E&P senior experienced lecturers.
► Visits to a drilling rig and a production site (in Pau training center).
► Numerious videos.
* When the course is delivered in Rueil-Malmaison, practical illustration is provided by video.

Learning Assessment
Quiz on request.

Prerequisites
No prerequisites for this course.

More info
Refer to the following complementary courses, which might be of interest:
“Introduction to Reservoir Engineering”; “Drilling Fundamentals”; “Well Completion & Servicing”; “Oil & Gas Field Processing”.

Expertise & Coordination
IFP Training trainer (permanent or contracted) having a good expertise and/ or experience of the related topics, trained to adult teaching methods, and whose competencies are kept up-to-date.

Reference: GENP/INFPGF
Can be organized as an In-House course.
Contact: fp.pau@ifptraining.com

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This course is also available in French: GENP/INFPGF. Please contact us for more information.

5 days

RESERVOIR ENGINEERING
1 d

WELL
2.25 d

OIL & GAS PROCESSING FACILITIES
1.75 d
Advanced Certificate
E&P Project Cost Estimation & Control Certification

Level: PROFICIENCY

Purpose
This course provides a structured and comprehensive approach towards cost estimation and control of upstream Oil & Gas projects.

Audience
Project engineers and managers, petroleum architects, engineers in charge of the modification/extension of existing facilities and R&D engineers.

Learning Objectives
Upon completion of the course, participants will be able to:
- technically define a project to provide a comprehensive cost estimate,
- perform estimates using a variety of methods and tools,
- apply the main cost control techniques used throughout the project execution.

Ways & Means
- Case studies from upstream projects.
- Spreadsheets will be used to perform project cost estimates from basic design parameters.

Learning Assessment
Quiz at the end of the module.

Prerequisites
No prerequisites for this course.

Why an IFP Training Certification?
- An international recognition of your competencies.
- An Advanced Certificate delivered.
- An expertise confirmed in E&P Project Cost Estimation & Control.
- Ready-to-use skills.

Expertise & Coordination
IFP Training trainer (permanent or contracted) having a good expertise and/ or experience of the related topics, trained to adult teaching methods, and whose competencies are kept up-to-date.

Course Content

OVERVIEW OF E&P PROJECTS
Introduction to exploration and production projects:
- Decision process from discovery to production.

Technical fundamentals:
- Production facilities.
- Structures and pipelines.

PROJECT COST ESTIMATION
Estimation framework:
- Cost evaluation during project evaluation phases:
  - Order of magnitude estimate. Factored/modular estimate.
- Cost evaluation during basic engineering and contracting phases:
  - Semi detailed estimate. Detailed estimate.
- From historical data to present time cost evaluation:
  - Cost escalation, cost indexes, inflation. Location factors.
- Additional cost elements:

CASE STUDIES ON COST ESTIMATION
CAPEX of an onshore project:
- Cost estimate of well clusters, CPF, flow lines, trunk lines and infrastructures using diverse documents (historical data, curves, etc.).
CAPEX of an offshore project:
- Cost estimate of a satellite field development.
CAPEX of a deep offshore project:
- Cost estimate of the three main packages (FPSO, UFR and SPS).
OPEX of an onshore field:
- Production, transformation and transport costs. Routine and non-routine costs.

COST CONTROL
Overview of cost control process.
- Impact of contracting strategy.
- Breakdown structures and budget.
- Commitment process.
- Change management.
- Forecasts and reporting.

Reference: PCTR/COSTGB
Can be organized as an In-House course.
Contact: pl.rueil@ifptraining.com

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This course is also available in French: PCTR/COSTFR. Please contact us for more information.
Advanced Certificate
E&P Project Management Certification

**Purpose**
This course explains how large E&P projects are managed from initial stage to completion.

**Audience**
Professionals who require a comprehensive understanding of project management practices for E&P projects.

**Learning Objectives**
Upon completion of this course, participants will be able to:
- conduct the preliminary stages of the project: conceptual and feasibility studies, economic evaluation, FEED,
- enforce project control processes to meet scope, cost and schedule objectives,
- strengthen HSE in project design and construction,
- select the right type of technical contract,
- manage pre construction phases: mainly basic engineering and call for tenders,
- manage construction phases: engineering, procurement, construction and commissioning.

**Ways & Means**
The course is illustrated with several examples taken from E&P projects.
A project case study is used throughout the course to illustrate each chapter.

**Learning Assessment**
Quiz at the end of the module.

**Prerequisites**
Basic knowledge of petroleum industry.

**Why an IFP Training Certification?**
- An international recognition of your competencies.
- An Advanced Certificate delivered.
- An expertise confirmed in E&P Project Management.
- Ready-to-use skills.

**Expertise & Coordination**
IFP Training trainer (permanent or contracted) having a good expertise and/or experience of the related topics, trained to adult teaching methods, and whose competencies are kept up-to-date.

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**Course Content**

**E&P CHAIN VALUE MANAGEMENT**
Project evaluation and choices throughout the exploration and production value chain. 0.5 d

**INTEGRATION & SCOPE MANAGEMENT**
Preliminary, conceptual and pre-project studies and their deliverables.
EPC phase objectives and project execution plan.
Local content and sustainable development. 0.5 d

**TECHNICAL SERVICE CONTRACTS**
Contracting strategy (project breakdown into contracts).
Types and comparison of technical contracts.
Endorsements and assignments.
Tendering process. 0.5 d

**PROJECT ORGANIZATION**
Interface management.
Management of human resources, organization charts, project manager's role.
Stakeholder management.
Communication management. 0.5 d

**HSE, QUALITY & RISK MANAGEMENT**
HSE: tools and techniques for safety and environment design, project reviews, safety concept and safety dossier.
HSE during construction phase, HSE indicators.
Quality: assurance, control and surveillance management.
Risks: identification, ranking, action plans. 1 d

**PROJECT CONTROL: COSTS & SCHEDULE**
Planning and scheduling: schedule elaboration, progress control, recovery plan.
Costs: estimation of facilities expenditures, budget elaboration, cost control, reporting. 1 d

**OIL & GAS PROJECT PHASES**
Detailed engineering: work packages, main deliverables, project reviews, documentation control, changes.
Procurement: activities (purchasing, expediting, inspection, shipping), long lead items, company supplied items, material control systems.
Construction/fabrication challenges: contractors and resources, (sub) contract types.
Construction at site: execution plan, construction methods (temporary construction facilities, prefabrication, modularization, delivery, erection), interface with commissioning.
Fabrication at yards: load-out, transport and installation.
Completion activities: methodology, sequence, completion dossiers, commissioning systems, hand-over and acceptance of the facilities.
Project close out and management of collective knowledge. 1 d

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**References:**
EPM/PROJGB Can be organized as an In-House course.
Contact: em.contact@ifptraining.com

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<td>Rueil</td>
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<td>22 November</td>
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Fundamentals of Production

Level: DISCOVERY

Purpose
This course provides an introduction to Oil & Gas production, along with a glossary of terms, covering fundamentals of technology, chain structure from well to export terminal, skills and job positions involved in operating production facilities.

Audience
Non-technical staff or technical professionals not directly involved in hydrocarbons production (managers, executives, technicians, staff of human resources, finance of projects departments...).

Learning Objectives
Upon completion of the course, participants will be able to:
- understand the different phases of the Oil & Gas production process,
- grasp the specific issues of offshore Oil & Gas production,
- understand organizations, skills and job positions involved in operating production facilities,
- acquire a complete view of the Oil & Gas production chain, stretching over technical, business and economic issues.

Ways & Means
- Course delivered by industry specialists.
- Numerous illustrations and case studies.

Learning Assessment
Continuous assessments all-along the program.

Prerequisites
No prerequisites for this course.

Expertise & Coordination
IFP Training trainer (permanent or contracted) having a good expertise and/or experience of the related topics, trained to adult teaching methods, and whose competencies are kept up-to-date.

Course Content

THE OIL & GAS CHAIN: PRODUCTION POSITION
Positioning of the production in the value E&P chain.
World primary production.
Issues and technical constraints:
- Conventional resources.
- Unconventional resources.
Job descriptions and skills for production activities.

ONSHORE & OFFSHORE PRODUCTION
Technical specifications, operating modes.
Operating patterns and mapping fields.
Technical architectures.
Organization (remote site, extreme conditions, manning, shift...).
Case studies: FPSO, wet gas field (onshore), oil fields operated with reinjection, remote control room, early production facilities...

FROM WELL TO EXPORT POINT
From reservoir to wellhead: hydrocarbons and well effluent behavior.
Well techniques, production techniques and well servicing.
Surface facilities and treatment operations.
Metering and expedition.
Health Safety and Environment, sustainability.
Budgets (CAPEX, OPEX) during the life cycle of a production field.

Reference: GENP/PRODCHAIN
This course is also available in French: GENP/CHAINPROD. Please contact us for more information.

Contact: exp.rueil@ifptraining.com
Oil & Gas Field Processing
Field treatments of Oil & Gas well effluent

Level: FOUNDATION

Purpose
This course provides a comprehensive overview of Oil & Gas field processing technology.

Audience
Engineers and technicians interested, although not directly involved, in day-to-day Oil & Gas field processing operations: reservoir engineers, drilling and completion personnel, platform designers, petroleum architects, equipment suppliers, economists…

Learning Objectives
Upon completion of the course, participants will be able to:
- list main characteristics of Oil & Gas well effluents, assess problems induced by unwanted compounds,
- explain gathering network design and operations,
- grasp fundamentals of Oil & Gas field processing operations and related operating conditions,
- ascertain the treatment processes necessary for production water and injection water.

Ways & Means
- Course delivered by industry specialists.
- Numerous applications and illustrations.

Learning Assessment
Assessment by test at the end of the course.

Prerequisites
No prerequisites for this course.

Expertise & Coordination
IFP Training trainer (permanent or contracted) having a good expertise and/ or experience of the related topics, trained to adult teaching methods, and whose competencies are kept up-to-date.

Course Content

WELL EFFLUENTS BEHAVIOR
Different types of well effluent. Main characterization parameters.
Liquid-vapor equilibrium of pure substances and mixtures. Effluent behavior.
 Constituents that pose problems for storage, transport or commercialization.
Main specifications to conform with and required treatments.

FUNDAMENTALS OF RESERVOIR & DRIVE MECHANISM
Reservoirs: types, exploration techniques.
 Drive mechanisms.
 Enhanced Oil Recovery (EOR): aim and principle of the main techniques.

FUNDAMENTALS OF DRILLING, COMPLETION & WELL PERFORMANCE
Drilling principle. Case of offshore drilling.
 Main completion equipment.
 Well performance. Needs for artificial lift: principle of artificial lift by pumping, gas lift…

WELL EFFLUENT TRANSPORTATION, FLOW-ASSURANCE & GAS HYDRATES PREVENTION
Gathering network design and operation:
 Main flow assurance issues.
 Multiphase flow. Flow patterns.
 Case studies: Gas condensate field development. Deep-offshore production.

CRUDE OIL PROCESSING
Crude stabilization by Multi Stage Separation (MSS): election of the number of stages, effect of operating parameters, management of foam issues.
Crude dehydration and desalting. Emulsion treatment: operating parameters, internals, chemicals selection.
Crude sweetening (H₂S removal).
Examples of oil treatment and associated gas compression process schemes.

PRODUCTION & INJECTION WATER TREATMENT
Quality requirements for production water. Environment related constraints.
Main produced water treatments: API oil-water separators, plate separators, flotators, hydrocyclones…
Reasons for water injection.
Quality requirements and necessary treatments: chlorination, filtration, oxygen removal, sulfate removal.
Examples of process schemes for production and injection water treatment.

GAS PROCESSING & CONDITIONING
Gas dehydration: TEG units, solid desiccants (molecular sieves) units.
Gas sweetening. Acid components (H₂S and CO₂) removal: amine units, molecular sieves, membranes.
Natural Gas Liquids (NGL) extraction: use of cryogenic refrigeration, Joule-Thompson expansion, turbo-expander.

LIQUEFIED NATURAL GAS
Fundamentals of Liquefied Natural Gas (LNG) chain.

Reference: PROP/OGFP  Can be organized as an In-House course.  Contact: exp.rueil@ifptraining.com

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This course is also available in French: PROP/IPGFS. Please contact us for more information.

Upstream Economics
Natural Gas
Production - Treatments - Transport - End Uses

Level: FOUNDATION

Purpose
This course provides a comprehensive review of the techniques involved in natural gas production, processing and transport, complemented with an overview of natural gas valorization channels.

Audience
Professionals from all sectors, involved or interested in the natural gas industry.

Learning Objectives
Upon completion of the course, participants will be able to:
- explain fundamentals of natural gas composition, characteristics, production and field processing,
- understand technical issues and specific constraints of natural gas transport and storage,
- review the various end-user markets available for valorizing natural gas,
- grasp key natural gas chain economic issues.

Ways & Means
- Highly interactive training by industry-specialist lectures.
- Numerous applications and illustrations.

Learning Assessment
Assessment by test at the end of the course.

Prerequisites
No prerequisites for this course.

Expertise & Coordination
IFP Training trainer (permanent or contracted) having a good expertise and/or experience of the related topics, trained to adult teaching methods, and whose competencies are kept up-to-date.

Course Content

NATURAL GAS: TYPES & PRODUCTION TECHNIQUES
Types and characteristics of natural gas fields. Production techniques. Different types of natural gases (condensate, wet or dry gas) and characterization parameters. Constitution of natural gas well effluent, properties and specific hazards. Case of associated gases: recovery techniques, characteristics, composition, etc.

END USES OF NATURAL GAS - MAIN QUALITY REQUIREMENTS
End uses of natural gases: fuel (domestic and industrial uses), conversion into other energy types (electricity production and cogeneration), automotive fuel (Natural Gas for Vehicles (NGV) and conversion into liquid automotive fuels GTL), chemical valorization, etc. Quality requirements for commercial natural gases and associated products (ethane, LPG, condensates). Examples of quality standards.

NATURAL GAS PROCESSING
Gas dehydration (drying) and hydrate formation inhibition:
- System behavior. Moisture content of a saturated gas.
- Applications: moisture content of different gases having various compositions.
- Hydrate formation inhibition by injection of inhibitors: MeOH, MEG, DEG, LDHI, etc.
- Gas dehydration: TEG units, Molecular Sieves, etc.
- Application: summary design of TEG unit.
Gas sweetening: removal of acid components (H₂S and/or CO₂):
- Different techniques applicable for gas sweetening:
  - Chemical solvent processes. Amine units (MEA, DEA, DGA, MDEA, etc.).
  - Physical solvent processes.
  - Hybrid (physico-chemical) solvent processes.
- Overview of other techniques.
- Conversion of H₂S: sulfur production (CLAUS process) and tail gas processing.
- Application: summary design of an amine unit.
Natural Gas Liquids (NGL) extraction (removal of heavy components):
- External refrigeration loop.
- Joule-Thomson expansion.
- Turbo-Expander.
- Application: calculation of cryogenic loop used for NGL extraction.
Examples of gas field development schemes:
- Gas fields development options: onshore or offshore processing, single-phase or multiphase export pipelines, “Wet” or “Dry” development.
- Other treatments: mercury removal, conversion or adsorption of mercaptans (RSH), etc.

TRANSPORT OF NATURAL GAS IN LIQUID PHASE - LNG OPTION
Liquefaction processes: principle, typical operating conditions, technology.
- LNG tanks: single or double or full containment (self-standing, membrane). Hazards.
- LNG transport: LNG carriers (MOSS spheres, membrane…), export and receiving terminals.
- LNG regasification at the receiving terminals, options for refrigeration duty recovery.

TRANSPORT & STORAGE OF NATURAL GAS IN GAS PHASE
Gas pipes: technology, capacities, equipment, recompression units, operating conditions, etc.
- Underground storage (old reservoirs, aquifers, salt domes, etc.). Required treatments at outlet.

NATURAL GAS ECONOMICS
Resources, production and markets.
- Natural gas marketing: competition of other energy sources and consequences on gas contracts (prices and duration), cost of transport and its impact on the structure of the gas chain.

Future of the natural gas.

Reference: NATG/NATGAS
Can be organized as an In-House course.

Location | Start Date | End Date | Tuition Fees
---|---|---|---
Rueil | 7 October | 11 October | €3,570

This course is also available in French: NATG/GAZNAT. Please contact us for more information.
**Upstream Economics**

**Graduate Certificate**

**Petroleum Engineering Certification**

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<tr>
<td><strong>Purpose</strong></td>
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<tr>
<td>This course provides in-depth technical knowledge of Oil &amp; Gas production in order to hold rapidly, and very effectively, the position of field engineer, design engineer, or project engineer.</td>
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<tr>
<td><strong>Audience</strong></td>
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<tr>
<td>Engineers (particularly recently graduated engineers or engineers in conversion) looking to acquire in-depth knowledge and best practices of Oil &amp; Gas production.</td>
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<tr>
<td><strong>Learning Objectives</strong></td>
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<tr>
<td>Upon completion of this course the participants will be able to:</td>
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<tr>
<td>1. Grasp fundamentals of reservoir engineering and drilling.</td>
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<td>2. Explain well completion and servicing, well performance and artificial lift, understand fundamental concepts underlaying Oil &amp; Gas processing, understand in detail operating conditions and basic design of oil, water and gas treatment.</td>
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<td>3. Describe technology of static equipment and rotating machinery used in production facilities.</td>
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<td>4. Explain offshore development techniques and flow assurance issues.</td>
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<td>5. Identify main risks related to Oil &amp; Gas production operations and review safety engineering best practices.</td>
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<td>6. Contribute to the dynamics of field development projects studies.</td>
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<td>7. Explain main contracts in E&amp;P and assess project profitability.</td>
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<td><strong>Ways &amp; Means</strong></td>
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<tr>
<td>1. Highly interactive training with industry specialist lecturers.</td>
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<td>2. Multiple teamwork sessions and industrial case studies.</td>
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<td>4. Final 10-day group project on a real field development case study, result of which are presented to a jury.</td>
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<td><strong>Prerequisites</strong></td>
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<td>Engineering degree or equivalent professional experience within the petroleum industry.</td>
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<td><strong>Why an IFP Training Certification?</strong></td>
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<td><strong>Expertise &amp; Coordination</strong></td>
</tr>
<tr>
<td>IFP Training (permanent or contracted) expert in data management with a wide experience and whose competences are kept up-to-date in industry projects.</td>
</tr>
</tbody>
</table>

### Course Content

<table>
<thead>
<tr>
<th>100 days</th>
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</thead>
<tbody>
<tr>
<td><strong>INTRODUCTION TO PETROLEUM GEOSCIENCES</strong></td>
</tr>
<tr>
<td>Elements &amp; processes of petroleum systems. Exploration tools (seismic &amp; well data). Prospect evaluation.</td>
</tr>
<tr>
<td>5 d</td>
</tr>
<tr>
<td><strong>INTRODUCTION TO RESERVOIR CHARACTERIZATION</strong></td>
</tr>
<tr>
<td>5 d</td>
</tr>
<tr>
<td><strong>INTRODUCTION TO RESERVOIR ENGINEERING</strong></td>
</tr>
<tr>
<td>Reservoir engineering workflow. Petrophysics/rock properties. PVT. Well testing. Drive mechanisms.</td>
</tr>
<tr>
<td>5 d</td>
</tr>
<tr>
<td><strong>DRILLING FUNDAMENTALS</strong></td>
</tr>
<tr>
<td>Drilling operations. Architecture of the well &amp; completion.</td>
</tr>
<tr>
<td>5 d</td>
</tr>
<tr>
<td><strong>WELL PRODUCTIVITY &amp; RESERVOIR - WELLBORE INTERFACE</strong></td>
</tr>
<tr>
<td>Well productivity. Reservoir wellbore interface implementation.</td>
</tr>
<tr>
<td>5 d</td>
</tr>
<tr>
<td><strong>ARTIFICIAL LIFT &amp; WELL INTERVENTION FUNDAMENTALS</strong></td>
</tr>
<tr>
<td>Artificial lift; gas lift, ESP. Types and means of intervention on producing wells. General procedure of a workover. Case study.</td>
</tr>
<tr>
<td>5 d</td>
</tr>
<tr>
<td><strong>WELL CONTROL</strong></td>
</tr>
<tr>
<td>Introduction to well control methods. Equipment. Wireline, coiled tubing, snubbing.</td>
</tr>
<tr>
<td>5 d</td>
</tr>
<tr>
<td><strong>THERMODYNAMICS APPLIED TO WELL EFFLUENT PROCESSING</strong></td>
</tr>
<tr>
<td>5 d</td>
</tr>
<tr>
<td><strong>OIL &amp; WATER TREATMENT</strong></td>
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<tr>
<td>5 d</td>
</tr>
<tr>
<td><strong>GAS PROCESSING &amp; CONDITIONING</strong></td>
</tr>
<tr>
<td>Gas processing: dehydration, sweetening, NGL recovery. Fundamentals of Liquefied Natural Gas (LNG) chain.</td>
</tr>
<tr>
<td>5 d</td>
</tr>
<tr>
<td><strong>STATIC EQUIPMENT &amp; SCHEMATIZATION</strong></td>
</tr>
<tr>
<td>5 d</td>
</tr>
<tr>
<td><strong>ELECTRICITY &amp; INSTRUMENTATION</strong></td>
</tr>
<tr>
<td>Electrical power generation and distribution network. Instrumentation and process control. Safety Instrumented Systems.</td>
</tr>
<tr>
<td>5 d</td>
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<tr>
<td><strong>METERING - MATERIAL BALANCE - ALLOCATION</strong></td>
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<tr>
<td>5 d</td>
</tr>
<tr>
<td><strong>ROTATING MACHINERY</strong></td>
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<tr>
<td>5 d</td>
</tr>
<tr>
<td><strong>OFFSHORE FIELD DEVELOPMENT - FLOW ASSURANCE</strong></td>
</tr>
<tr>
<td>5 d</td>
</tr>
<tr>
<td><strong>SAFETY &amp; ENVIRONMENT IN SURFACE PROCESSING FACILITIES</strong></td>
</tr>
<tr>
<td>Hazards and risks in production operations. Safety in production operations and during construction or maintenance works. HSE management.</td>
</tr>
<tr>
<td>5 d</td>
</tr>
<tr>
<td><strong>SAFETY ENGINEERING</strong></td>
</tr>
<tr>
<td>HAZID application. HAZOP exercise, plant layout exercise. QRA and consequence analysis methodology. SIS and relief systems design.</td>
</tr>
<tr>
<td>5 d</td>
</tr>
<tr>
<td><strong>PETROLEUM ECONOMICS &amp; PROJECT MANAGEMENT</strong></td>
</tr>
<tr>
<td>5 d</td>
</tr>
<tr>
<td><strong>FIELD DEVELOPMENT PROJECT - JURY</strong></td>
</tr>
<tr>
<td>10 d</td>
</tr>
</tbody>
</table>

Reference: GENP/PETROLENG  
Only available as an In-House course.  
Contact: exp.rueil@ifptraining.com

This course is also available in French: GENP/INGPETROL. Please contact us for more information.
Graduate Certificate
LNG Processing Engineer Certification

Level: FOUNDATION

Purpose
This course provides in-depth technical knowledge of natural gas treatment and liquefaction facilities design and operation necessary to hold rapidly, and very effectively, the position of Process Engineer, Field Engineer or Technical Service Engineer.

Audience
Engineers (particularly recently graduated engineers or engineers in conversion) interested in specialization in gas treatment and liquefied natural gas processing.

Learning Objectives
Upon completion of the course, participants will be able to:
- explain the thermodynamics involved in natural gas treatment and liquefaction, especially cryogenic loops.
- explain natural gas processing & liquefaction process.
- analyze operating conditions and basic design of gas treatment and liquefaction plant.
- describe the technology of static equipment and rotating machinery used in LNG plants.
- identify the main risks related to gas treatment and liquefaction and efficiently contribute to safety engineering studies.

Ways & Means
- Highly interactive training with industry-specialist lecturers.
- Multiple teamwork sessions and industrial case studies.
- Practice on dynamic simulator.
- Numerous process simulation exercises using HYSYS™ or PRO/II™ software.

Learning Assessment
- Continuous assessments all-along the program.
- Final assessment including a presentation in front of a jury.

Prerequisites
Engineering degree or equivalent professional experience within the petroleum industry.

Why an IFP Training Certification?
- An international recognition of your competencies.
- A Gradually Certificate delivered.
- An expertise confirmed in LNG Processing Engineer.
- Ready-to-use skills.

Expertise & Coordination
IFP Training trainer (permanent or contracted) having a good expertise and/ or experience of the related topics, trained to adult teaching methods, and whose competencies are kept up-to-date.

Course Content

THERMODYNAMICS APPLIED TO WELL EFFLUENT PROCESSING 5 d

GAS PROCESSING & CONDITIONING 5 d

DYNAMIC SIMULATION OF GAS PROCESSING FACILITIES 5 d
During this week, case study and exercises are performed using a DCS replica in order to allow the participants to understand process dynamics. Hydrates detection and inhibition in gathering network. Gas processing. Gas dehydration: impact of operating conditions. Multistage gas compression and export: study of operating parameters.

LIQUEFIED NATURAL GAS 5 d

LNG PROCESS SIMULATION 5 d
During this week, case study and exercises are performed using HYSYS™ or PRO/II™ software in order to allow the participants to design and optimize liquefaction processes: gas field treatment (separators, dehydration, compression); NGL fractionation and stabilization; simulation of a cascade liquefaction process, of a C3MR liquefaction process, of a turbo-expander based liquefaction process; integration of the liquefaction processes with the NGL recovery/fractionation; comparison of the efficiency of the processes versus load conditions.

PIPING SYSTEMS & PROCESS EQUIPMENT: TECHNOLOGY & SIZING 5 d

INSTRUMENTATION, PROCESS CONTROL & SCHEMATIZATION 5 d

PUMPS & COMPRESSORS 5 d
Fundamentals of hydraulic circuits and gas compression. Operating principles, technology, selection criteria, performances and operating conditions of centrifugal and volumetric pumps as well as centrifugal and reciprocating compressors.

GAS TURBINES - ELECTRICAL GENERATION 5 d
Upon customer request, this module can be tuned to team generation and team turbines operations. Gas turbines: equipment technology, operating conditions, performances, operation. Turbo-expander: technology, operation. Electrical power generation. Electrical power distribution network and equipment.

LNG - SPECIFIC SAFETY ENGINEERING 5 d
LNG specific hazards: stratification/roll-over, sloshing, LNG clouds ignition, asphyxiation risks, cryogenic liquids jets, piping behavior. LNG spillage control at design stage and in operation. LNG clouds control in operation. LNG fires control at design stage and in operation. Main safety engineering studies: HAZID and HAZOP workflow and application; plant layout case study; QRA - Consequence analysis methodology.

HSE IN OPERATIONS & MAINTENANCE WORKS 5 d

CASE STUDY BASED ON LNG PLANT P&IDs & JURY 5 d
During this week, participants will work in team to analyze LNG plant P&IDs and present the results of their analysis to a jury: this 5-day teamwork project is a real case study based on actual data. Participants are coached throughout the project to produce the required deliverables, which are to be presented on the last day (jury): process operating parameters, process control loops and safety loops; operating philosophy; materials and equipment selection.

Reference: LNG/LNGENG

Contact: expand@ifptraining.com

This course is also available in French: LNG/LNGFR. Please contact us for more information.
HSE Management

Course Content

OVERVIEW OF HSE MANAGEMENT SYSTEM
0.25 d

FUNDAMENTALS OF HSE MANAGEMENT SYSTEM
0.5 d

MANAGEMENT COMMITMENT & LEADERSHIP
0.5 d

RISK MANAGEMENT
1 d

HSE PLANNING & CRISIS MANAGEMENT
0.75 d

ELEMENTS FOR EXECUTION & CONTROL
1 d

AUDITS & CONTINUOUS IMPROVEMENT
1 d
Overview of Petroleum Economics

Level: FOUNDATION

Purpose
This course aims to provide an overview of the petroleum sector so that participants may understand the oil operations and business, from upstream to downstream, and identify economic challenges.

Audience
This course is geared towards people from the energy and petroleum sectors, industrial partners, business men and financiers, as well as public administration staff.

Learning Objectives
Upon completion of the course, participants will be able to:

- describe the different types of energy resources (conventional, unconventional, renewable & fossil),
- interpret the evolution of the factors affecting the energy supply and demand (crude prices, technology, reserves, geopolitics, geography, environment, etc.),
- identify the actors of the energy scene and their strategic guidelines,
- describe the main steps of the upstream sector,
- distinguish the different types of oil contracts and explain the main economic criteria to evaluate a project,
- summarize the operation of the physical and financial oil markets,
- explain the evolution of the refining sector and of the petroleum product markets.

Ways & Means
Quiz and serious game on the fundamentals of the energy sector,
Case study on the economic evaluation of an E&P project,
Exercises on cargo transportation costs, hedging, and refining margins,
Team games on factors affecting crude prices, the upstream sector, and oil trading.

Learning Assessment
Participants will be evaluated during the training through quiz and exercises.

Prerequisites
No prerequisites for this course.

Expertise & Coordination
In-house or contracted IFP Training trainers having expertise and experience in oil sector economics.

Reference: TRT/OPE  Can be organized as an In-House course.
Contact: em.contact@ifptraining.com

<table>
<thead>
<tr>
<th>Location</th>
<th>Start Date</th>
<th>End Date</th>
<th>Tuition Fees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rueil</td>
<td>3 December</td>
<td>6 December</td>
<td>€2,570</td>
</tr>
</tbody>
</table>

This course is also available in French: TRT/EPE. Please contact us for more information.
Oil Markets & Trading

Level: PROFICIENCY

Purpose
This training provides a better understanding of the structure of the markets, the uses and the impacts of physical and financial markets for crude oil and petroleum products.

Audience
All personnel in the petroleum or associated industries needing to improve their knowledge and understanding of crude oil and petroleum products trading and pricing mechanisms.

Learning Objectives
Upon completion of the course, participants will be able to:
- analyze the parameters which influence prices of crude oil and prices of petroleum products,
- review the different oil trading markets by type of transaction,
- understand the importance of maritime transport costs in oil supply economics,
- comprehend hedging techniques available for protection against fluctuations in prices.

Ways & Means
- Syndicate works on case studies.
- Case studies.

Learning Assessment
Participants will be evaluated during the training through exercises and case studies.

Prerequisites
Bachelor's degree +3 and/or a minimum 3 years of working experience in Downstream.

Expertise & Coordination
In-house or contracted IFP Training trainers having expertise and experience in oil markets and trading.

Course Content

<table>
<thead>
<tr>
<th>OIL SUPPLY &amp; DEMAND FUNDAMENTALS</th>
<th>0.25 d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy resources.</td>
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<tr>
<td>Energy demand and supply.</td>
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<tr>
<td>Oil producing countries, OPEC, consuming countries, international oil companies: constraints and strategies.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>SHIPPING</th>
<th>0.25 d</th>
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<tbody>
<tr>
<td>General features.</td>
<td></td>
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<tr>
<td>The Market and its players- Fixing of the freight rate (Worldscale).</td>
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<tr>
<td>Chartering contracts.</td>
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<tr>
<td>Risk control and environmental protection.</td>
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</table>

<table>
<thead>
<tr>
<th>CRUDE &amp; PETROLEUM PRODUCTS PHYSICAL TRADING</th>
<th>1 d</th>
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</thead>
<tbody>
<tr>
<td>What is the value of a crude oil? The refiner’s point of view.</td>
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<tr>
<td>Different types of contracts: long term, spot and forward.</td>
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<tr>
<td>Main oil markets and their features.</td>
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<tr>
<td>Key benchmark crudes.</td>
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<tr>
<td>The role of the PRAs (price reporting agencies).</td>
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<tr>
<td>Links between Trading and Shipping.</td>
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<tr>
<td>Products trading.</td>
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<tr>
<td>Main provisions of a sale/purchase contract.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>EXCHANGES &amp; FUTURES TRADING</th>
<th>1 d</th>
</tr>
</thead>
<tbody>
<tr>
<td>The concept of volatility</td>
<td></td>
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<tr>
<td>Definition of a contract: the cases of WTI and Brent.</td>
<td></td>
</tr>
<tr>
<td>Exchanges and their organization: the cases of NYMEX and ICE.</td>
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</tr>
<tr>
<td>Main Futures Markets.</td>
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<tr>
<td>Hedging principles.</td>
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<tr>
<td>Hedging imperfections, basis risk.</td>
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<tr>
<td>Market structure (contango, backwardation).</td>
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<tr>
<td>Case studies.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>DERIVATIVES</th>
<th>0.25 d</th>
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<tbody>
<tr>
<td>Options: principles, basics and characteristics.</td>
<td></td>
</tr>
<tr>
<td>Interests and limits of options.</td>
<td></td>
</tr>
<tr>
<td>Swaps: principles, basics and characteristics.</td>
<td></td>
</tr>
<tr>
<td>Interests and limits of swaps.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HEDGING STRATEGIES - VARIOUS CASE STUDIES ON HEDGING</th>
<th>0.25 d</th>
</tr>
</thead>
<tbody>
<tr>
<td>For a refiner.</td>
<td></td>
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<tr>
<td>For a crude oil producer.</td>
<td></td>
</tr>
<tr>
<td>For a marketer.</td>
<td></td>
</tr>
<tr>
<td>For an industrial consumer.</td>
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</tbody>
</table>

Reference: TRT/OMT. Can be organized as an In-House course.
Contact: em.contact@ifptraining.com

<table>
<thead>
<tr>
<th>Location</th>
<th>Start Date</th>
<th>End Date</th>
<th>Tuition Fees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rueil</td>
<td>21 May</td>
<td>23 May</td>
<td>€2,360</td>
</tr>
</tbody>
</table>

This course is also available in French: TRT/MTP. Please contact us for more information.
Price Risk Management in Energy Markets

**Level:** PROFICIENCY

**Purpose**
This training provides a better understanding of the principles and techniques for Oil & Gas price risk management.

**Audience**
Professionals in the Oil & Gas industries impacted by the volatility of oil or gas prices: producers, marketers, refiners. Purchasing, planning and finance departments of energy consumers. Professionals from the bank sector who need to understand the specificities of Oil & Gas price risk management.

**Learning Objectives**
Upon completion of the course, participants will be able to:
- review the ways of evaluating price risk,
- analyze and manipulate the exchange traded products used for hedging,
- understand the different over the counter products used in hedging strategies for different Oil & Gas activities.

**Ways & Means**
- Selected teaching methods: case studies.
- Hedging exercises.

**Learning Assessment**
Participants will be evaluated during the training through exercises and case studies.

**Prerequisites**
Bachelor’s degree +3 and/or a minimum 3 years of working experience in oil Supply chain or oil Markets.

**Expertise & Coordination**
In-house or contracted IFP Training trainers having expertise and experience in price risk management in energy markets.

**Course Content**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OIL &amp; GAS MARKETS</strong></td>
<td>0.25 d</td>
</tr>
<tr>
<td>Physical Oil &amp; Gas markets. Markets structures and types of transactions. Price references and pricing mechanisms.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Topic</th>
<th>Duration</th>
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<tbody>
<tr>
<td><strong>PRICE EXPOSURE &amp; RISK MANAGEMENT</strong></td>
<td>0.75 d</td>
</tr>
<tr>
<td>Price risk: what is at risk? How to monitor it? How to mitigate the risk: definition of hedging. How to account for the risk: Mark to Market and Value-At-Risk.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Topic</th>
<th>Duration</th>
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<tbody>
<tr>
<td><strong>EXCHANGE TRADED PRODUCTS: FUTURES</strong></td>
<td>0.75 d</td>
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<tr>
<th>Topic</th>
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</thead>
<tbody>
<tr>
<td><strong>OTHER DERIVATIVE INSTRUMENTS: FORWARDS, SWAPS &amp; OPTIONS</strong></td>
<td>0.75 d</td>
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<table>
<thead>
<tr>
<th>Topic</th>
<th>Duration</th>
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</thead>
<tbody>
<tr>
<td><strong>HEDGING STRATEGIES</strong></td>
<td>0.5 d</td>
</tr>
<tr>
<td>Various examples. Case study.</td>
<td></td>
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</tbody>
</table>

**Reference:** TRT/PRM - Can be organized as an In-House course.

**Contact:** em.contact@ifptraining.com

<table>
<thead>
<tr>
<th>Location</th>
<th>Start Date</th>
<th>End Date</th>
<th>Tuition Fees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rueil</td>
<td>15 October</td>
<td>17 October</td>
<td>€2,560</td>
</tr>
</tbody>
</table>
Shipping: General Features, Chartering Contracts & Operations

Level: PROFICIENCY

Purpose
This training provides participants a thorough knowledge of the technical, operational and commercial conditions concerning the transport of hydrocarbons by sea as well as an introduction to the legal and financial aspects of the shipping.

Audience
Professionals in the oil industry, involved in the supply, shipping, distribution activities and who need to improve their knowledge in operational and contractual aspects of shipping.

Learning Objectives
Upon completion of the course, participants will be able to:
- assess nautical capacity and technical criteria of a ship in particular for the transport of hydrocarbons,
- understand the risks associated with maritime activities (boating, environmental, policy...), as well as the regulations and related procedures,
- integrate into their reflection operational and strategic constraints that apply to the ship-owner or the carrier,
- negotiate in the best possible conditions contract litigations deriving from oil products marine operations,
- understand the tanker chartering market better.

Ways & Means
Illustration of actual cases.

Learning Assessment
Participants will be evaluated during the training through exercises.

Prerequisites
Minimum of 3 years of working experience in oil business and/or seagoing shipments of oil products.

Expertise & Coordination
Contracted IFP trainers having expertise and experience in shipping.

Course Content

VESSSEL SPECIFICATIONS
Maritime vocabulary: position, distance, speed...
Ship measurements: tonnage, displacement, dimensions...
Anatomy of a ship: main features.
Nature of cargoes: dry, wet, specialties.
Ships offering: various types, age profile, specific focus on oil tankers and gas carriers.

SHIPPING FINANCIAL & LEGAL ASPECTS - BASICS OF INTERNATIONAL MARITIME LAWS
Elements of financing and profitability: type of fund raise, appreciation on current financial situation.
The current state of the shipbuilding industry.
The link between states and ship-owners: notions on the registration of ships, the world fleet by flag, by investing countries.
General notions of maritime legislation: territorial waters, EEZ, traffic separation, arctic waters...
Seaways: main maritime routes, Panama and Suez Canal, port network.
Piracy: legal, operational and financial consequences.

RISKS CONTROL & ENVIRONMENTAL PROTECTION
Impact on the environment: ITOFP statistics, Oil spills, GHG emissions...
International regulations: IMO conventions, MARPOL, SOLAS, STCW, ILO, ISPS...
Green regulations: air pollution, EEDI, ECA zone, BWM, ship recycling.
Impact on international shipping: SEEMP, engine technology, scrubbers, bunkering alternatives, financial impact.
Procedures for the transport of oil products: SIRE, TMSA, Vetting process.

THE SHIPPING CHAIN & THE PORT COMMUNITY
The Seaport: main features.
The maritime transportation occupations: agents, forwarders, stevedore’s, customs…
The handling of the ship in the port: port authority, pilot and tugs, peers main features...
Operating expenses of ships: fixed and variable costs, disbursement accounts.
The maritime transportation “contract”: Hague Visby, Rotterdam Rules, B/L/…

SHIPPING EXPLOITATION & OPERATIONS
The bunkering market: products, players, contracts, market organization, PLATTS, BUNKERWIRE.
Risk management: basis of hedging, futures, swaps, options.
The marine lubricants market: products, players, contractual aspect.
Quantity measurements: industry commonly agreed procedures ROB, OBO, VEF, VAR, ISGOTT, specific focus on gas.
Cargo loading procedure: interface ship/shore, planning, sampling, pumping rates, topping off.
Ship To Ship (STS) operations: planning and notice, POAC role…
Claim handling: quantity, quality.

THE FREIGHT MARKET - PRICING MECHANISMS
Organization and operation in shipping and energy markets.
Freight market organization: players and segmentation.
Freight rates structure: WORLDSCALE, BALTIC.
Risk management: FFA.
Market insights: appreciation of the market situation for various classes of oil tankers and gas carriers.

LPG & LNG SHIPPING MARKETS
Introduction.
LPG shipping market.
LNG shipping market: contract conditions, current and evolutions…
LNG Liquefaction Regasification plants.
LNG market insights: appreciation of current situation.

CHARTERING AGREEMENT & CHARTER PARTY
Chartering agreement principles: different types, main terms, standard clauses, rider clauses.
Chartering agreement main definitions: Laycan, NOR, Laytime, example of calculation, demurrage, detention, retention…
Main litigation causes.
Role and responsibilities: split between charterer and ship-owner depending on charter type.
Coming to a chartering agreement: various steps and procedures, role of the broker.
Charter party specific clauses: force majeure, war risk, slow steaming, virtual arrival…
Some litigation cases: practical examples.

Reference: TRT/CFS
Contact: em.contact@ifptraining.com

Location Start Date End Date Tuition Fees
Rueil 10 December 13 December €3,030

This course is also available in French: TRT/CES. Please contact us for more information.
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<td>Refinery Operation Management &amp; Linear Programming</td>
<td>p. 42</td>
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<tr>
<td>Economic Framework of Refining</td>
<td>p. 43</td>
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<tr>
<td>Planning &amp; Economics of Refinery Operations</td>
<td>p. 44</td>
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<td>Economic Optimization of Refining Operations</td>
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<td>Refining &amp; Petrochemicals Synergies</td>
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<td>Economic Framework of Petrochemicals</td>
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<td>Profitability Analysis of Downstream Investment Projects</td>
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<td>Supply Chain Management</td>
<td>p. 50</td>
</tr>
<tr>
<td>Downstream Module</td>
<td>p. 51</td>
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</tbody>
</table>
### Course Content

**15 days**

<table>
<thead>
<tr>
<th>Module</th>
<th>Duration</th>
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</thead>
<tbody>
<tr>
<td><strong>TRADING</strong></td>
<td>2 d</td>
</tr>
<tr>
<td>Oil supply and demand fundamentals.</td>
<td></td>
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<tr>
<td>Petroleum physical trading.</td>
<td></td>
</tr>
<tr>
<td>Financial trading (futures), markets place, derivatives.</td>
<td></td>
</tr>
<tr>
<td>Hedging and strategies.</td>
<td></td>
</tr>
<tr>
<td><strong>REFINING &amp; PETROCHEMICALS ECONOMICS</strong></td>
<td>3 d</td>
</tr>
<tr>
<td>Brief technical overview of the main refining and petrochemical processes.</td>
<td></td>
</tr>
<tr>
<td>World refining and petrochemicals demand.</td>
<td></td>
</tr>
<tr>
<td>Evolution of the downstream supply: refining overcapacities, production nature and quantity.</td>
<td></td>
</tr>
<tr>
<td>Main challenges for the refining sector: deep conversion, new product specifications, petrochemical integration, environment, etc.</td>
<td></td>
</tr>
<tr>
<td>Refining margins and costs.</td>
<td></td>
</tr>
<tr>
<td>Case study: valuation of intermediate products of a FCC (Fluid Catalytic Cracking) unit.</td>
<td></td>
</tr>
<tr>
<td>Case study: refinery blending simulation.</td>
<td></td>
</tr>
<tr>
<td>Main characteristics of the petrochemical business: economic drivers, cyclic behavior, etc.</td>
<td></td>
</tr>
<tr>
<td>Case study: steam cracker economics.</td>
<td></td>
</tr>
<tr>
<td><strong>OPTIMIZATION OF REFINING OPERATION - LINEAR PROGRAMMING</strong></td>
<td>2.5 d</td>
</tr>
<tr>
<td>Linear programming (LP) principles: linear equation, objective function, profit maximization or cost minimization, Simplex method, graphic interpretation, etc.</td>
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<tr>
<td>Analysis of the LP results: optimum properties, marginal costs, domain of validity of the results, etc.</td>
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<tr>
<td>Case study on Excel: introduction to the preparation of a refinery model matrix (material balances, products specifications, utilities consumption, objective function, etc.); team work on the optimization of a cracking refinery.</td>
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</tr>
<tr>
<td><strong>REFINING OPERATIONS PLANNING - SCHEDULING</strong></td>
<td>1.5 d</td>
</tr>
<tr>
<td>Principles of refining management: constraints, operations organization.</td>
<td></td>
</tr>
<tr>
<td>Monthly program to daily operations.</td>
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</tr>
<tr>
<td>Optimization of margins from different process units.</td>
<td></td>
</tr>
<tr>
<td>Case study: management of typical sequential constraints (delays, processing problems, etc.).</td>
<td></td>
</tr>
<tr>
<td><strong>INVESTMENT PROFITABILITY STUDIES</strong></td>
<td>1 d</td>
</tr>
<tr>
<td>Value creation and capital cost, cash flows, discounting principle and inflation impact.</td>
<td></td>
</tr>
<tr>
<td>Standard global profitability analysis: cash flow schedule, economic criteria.</td>
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<tr>
<td>Introduction to risk analysis.</td>
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<tr>
<td>Exercises on various investment profitability studies for refineries and petrochemical plants.</td>
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</tr>
<tr>
<td><strong>STRATEGIC MARKETING</strong></td>
<td>2 d</td>
</tr>
<tr>
<td>Marketing role in a firm and in the economy, marketing organization.</td>
<td></td>
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<tr>
<td>Measuring the firm’s competitiveness.</td>
<td></td>
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<tr>
<td>Designing a development strategy.</td>
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<tr>
<td><strong>SUPPLY CHAIN MANAGEMENT</strong></td>
<td>3 d</td>
</tr>
<tr>
<td>Supply chain principles: definitions, review of activities, interactions with consumers.</td>
<td></td>
</tr>
<tr>
<td>Storage management: &quot;pull&quot; and &quot;push&quot; modes, basic tools for stock management, technical and economic aspects.</td>
<td></td>
</tr>
<tr>
<td>Supply chain design and methodological approaches: analysis of the industry (organization, process, location).</td>
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<tr>
<td>Benchmarking context.</td>
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</tbody>
</table>
Refinery Operation Management & Linear Programming

### Purpose
This course provides an in-depth understanding of the techniques used for decision-making operations concerning supply and refining.

### Audience
Managerial staff, supply planners, oil economists and personnel in charge of supply, planning, programs and product blending.

### Learning Objectives
Upon completion of the course, participants will be able to:
- Optimize refinery operations, crude oil assessment and crude oil selection,
- Analyze the results of a linear programming model optimization,
- Help optimizing a planning, from preparation of optimal monthly programs up to daily operation scheduling.

### Ways & Means
- Case studies and exercises derived from present refinery situations.
- Economic optimization using Excel software and the solver.
- Quiz.

### Learning Assessment
Participants will be evaluated during the training through exercises and case studies.

### Prerequisites
Knowledge of refining unit operations.

### Expertise & Coordination
In-house or contracted IFP Training trainers having expertise and experience in refinery operations management and linear programming.

### Reference: EAV/ROM
Only available as an In-House course.

### Contact:
em.contact@ifptraining.com

<table>
<thead>
<tr>
<th>Course Content</th>
<th>5 days</th>
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</thead>
<tbody>
<tr>
<td><strong>OIL MARKETS &amp; TRADING</strong></td>
<td>0.25 d</td>
</tr>
<tr>
<td>Oil supply and demand fundamentals and evolution. Petroleum physical trading (spot, forward). Crude oil and petroleum product pricing: benchmark, quality differential, etc. Financial trading (futures) and hedging strategies for a refiner.</td>
<td></td>
</tr>
</tbody>
</table>

| **REFINING CONTEXT** | 0.5 d |

| **REFINING MARGINS & COSTS** | 0.75 d |

| **OPTIMIZATION OF REFINING OPERATIONS - LINEAR PROGRAMMING** | 2.5 d |
| Linear programming (LP) principles: linear equation, objective function, profit maximization or cost minimization, Simplex method, graphic interpretation, etc. Analysis of the LP results: optimum properties, marginal costs, domain of validity of the results, etc. Case study on Excel: parametrization and preparation of a refinery model matrix (material balances, product specifications, utilities consumption, objective function, etc.); team work on the optimization of a cracking refinery and on the result analysis. |

| **OPTIMIZATION OF REFINERY OPERATIONS - SCHEDULING** | 1 d |
| Principles of refining management: constraints, operations organization. Monthly program to daily operations. Optimization of margins from different process units. Case study: management of typical sequential constraints (delays, processing problems, etc.). |
Economic Framework of Refining

Course Content

<table>
<thead>
<tr>
<th>Technical Overview</th>
<th>0.25 d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brief technical presentation of the main refining units: distillation, conversion, blending, etc.</td>
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<tr>
<td>Refinery scheme evolution.</td>
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<td>World petroleum product demand.</td>
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<td>Refining supply: overcapacity, types and quantity.</td>
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<tr>
<td>Main challenges: deep conversion, new product specifications, petrochemical integration, environment, etc.</td>
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<td>Projects and perspectives.</td>
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<tr>
<th>Refining Margins &amp; Costs</th>
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<tr>
<td>Refinery margins and costs: definitions and evolution worldwide.</td>
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<tr>
<td>Unit margins and intermediate product valuation.</td>
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<tr>
<td>Case studies: crude oil arbitrage, Fluid Catalytic Cracking (FCC) unit margin.</td>
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<tr>
<th>Refinery Blending Simulation</th>
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<tbody>
<tr>
<td>Case study: managing the blending operation of a refinery taking into account the economic and technical (product specifications, capacities, etc.) constraints.</td>
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<tr>
<td>Exercises on various investment profitability studies for refineries and petrochemical plants.</td>
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</table>

Ways & Means

- Case studies and exercises derived from present refinery situations.
- Economic optimization using Excel.
- Quiz.

Learning Assessment

Participants will be evaluated during the training through exercises and case studies.

Prerequisites

Basic notions of Microsoft Excel.

Expertise & Coordination

In-house or contracted IFP Training trainers having expertise and experience in refining sector.
Planning & Economics of Refinery Operations
In collaboration with the Energy Institute, London

Course Content

**TECHNICAL OVERVIEW**
Brief technical presentation of the main refining units: distillation, conversion, etc.

**0.25 d**

**REFINERY MARGINS & COSTS**
Refinery margins and costs: definitions and evolution worldwide.
Notion of break-even point.
Unit margins and intermediate product valuation.
Case studies: crude oil arbitrage, Fluid Catalytic Cracking (FCC) unit margin.

**0.75 d**

**REFINERY BLENDING SIMULATION**
Case study: managing the blending operation of a refinery taking into account the economic and technical (product specifications, capacities, etc.) constraints.

**0.5 d**

**OPTIMIZATION OF REFINING OPERATIONS - LINEAR PROGRAMMING**
Linear programming (LP) principles: linear equation, objective function, profit maximization or cost minimization, Simplex method, graphic interpretation, etc.
Analysis of the LP results: optimum properties, marginal costs, domain of validity of the results, etc.
Case study on Excel: explanation of a refinery model matrix (material balances, product specifications, utilities consumption, objective function, etc.); team work on the optimization of a cracking refinery and on the result analysis.

**1 d**

**CRUDE OIL ASSESSMENT & SELECTION**
Different methods to assess a crude: netback value, method of the complementary crude.
Case study: crude oil ranking using a LP model.

**0.5 d**

**Ways & Means**
- Case studies and exercises derived from present refinery situations.
- Economic optimization using Excel.
- Quiz.

**Learning Assessment**
Participants will be evaluated during the training through exercises and case studies.

**Prerequisites**
Basic notions of Microsoft Excel.

**Expertise & Coordination**
In-house or contracted IFP Training trainers having expertise and experience in refinery operations.

Reference: EAV/PERO
Can be organized as an In-House course.

Contact: em.contact@ifptraining.com

<table>
<thead>
<tr>
<th>Location</th>
<th>Start Date</th>
<th>End Date</th>
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<tbody>
<tr>
<td>Rueil</td>
<td>15 October</td>
<td>17 October</td>
<td>€2,770</td>
</tr>
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</table>
Economic Optimization of Refining Operations

**Level:** PROFICIENCY

**Purpose**
This course allows the participants to acquire the main economic challenges of running a refinery and a better understanding of the oil markets (crude oil and petroleum products) in order to optimize refining operations.

**Audience**
Engineers, independent consultants, subcontractors or managers from refining who need a better understanding of operation optimization.

**Learning Objectives**
Upon completion of the course, participants will be able to:
- Understand the economic issues and the main parameters influencing refining profitability.
- Develop a working knowledge of management tools and models used in the industry.
- Get a grasp of the input/output balances of the refining industry.
- Calculate product value (intermediate, semi-finished or finished products), refinery margins and process unit margins; how cost and margins compare; how to simulate refinery operations and product blending.
- Understand and analyze the refining margin from an operational point of view, considering the contribution of each unit operation.
- Understand the notion of break-even point (as an evaluation tool for assessing the resilience of a refinery to economic changes).
- Comprehend ways to optimize refinery operations, crude oil selection and product manufacturing, in order to improve profitability.
- Gain a working knowledge in decision-making regarding future investments.
- Better understand and use the various elements that contribute to refining margin improvement, such that: blending optimization, energy optimization, maintenance management, inventory management, analysis, performance monitoring…

**Ways & Means**
- Case studies.
- Example cost of give-away.
- Calculation of a working inventory.

**Learning Assessment**
Participants will be evaluated during the training through exercises and case studies.

**Prerequisites**
Basic notions of Microsoft Excel.

**Expertise & Coordination**
In-house or contracted IFP Training trainers having expertise and experience in economic optimization of refining operations.

**Course Content**

- **TECHNICAL OVERVIEW**
  - Petroleum demand.
  - Crude oils - Qualities and characteristics.
  - Petroleum products - Characteristics and specifications.
  - Refining schemes and processes.

- **PRICE CONSTITUTION OF CRUDE OILS & PETROLEUM PRODUCTS**
  - The different types of crude oils and their interactions.
  - Notions of incoterms (FOB, CIF…).
  - Price determination from reporting agencies (e.g.: Platt’s and Argus).

- **REFINING MARGINS & COSTS**
  - Definitions.
  - Different types of margins and indicators.
  - Principle of estimation of the real margin in a refinery from the reference indicator.
  - Refining variable and fixed costs.
  - Definitions and principle of a refinery break-even point.

- **REFINING MANAGEMENT ITEMS**
  - Economic impact of unit yields.
  - Product valorization challenges.
  - Notion of constraint cost.
  - The use value of intermediate, semi-finished and finished products.
  - Examples.

- **VALUE & SIMULATION OF INTERMEDIATE & SEMI-FINISHED PRODUCTS**
  - Value of a product depending on its use and the economic context.
  - Notion of marginal cost, netback value.
  - Capital gain or loss of separation, product blending or transformation operations; examples.
  - Case study of the premium “straight-run” for atmospheric residues.

- **HOW TO IMPROVE THE REFINING MARGIN DAILY?**
  - Blending optimization.
  - Energy integration, maintenance management.
  - Monitoring and control of consumption (energy, chemicals, catalysts) and losses.
  - Inventory management, working inventory.
  - Organization, reactivity, employees training.
  - Implementation analysis and performance monitoring tools (KPI: Key Performance Indicators)…

- **OPTIMIZATION OF THE FEEDSTOCKS - KEY CRITERIA**
  - Crude oil case study: tools and models used, basic knowledge of linear programming.
  - Case study.

**Ways & Means**
- Case studies.
- Example cost of give-away.
- Calculation of a working inventory.

**Learning Assessment**
Participants will be evaluated during the training through exercises and case studies.

**Prerequisites**
Basic notions of Microsoft Excel.

**Expertise & Coordination**
In-house or contracted IFP Training trainers having expertise and experience in economic optimization of refining operations.
Refining & Petrochemicals Synergies

Course Content

2 days

TECHNICAL REVIEW OF REFINING & PETROCHEMICALS

0.5 d
Main petroleum and petrochemicals products: key product specifications review.
Refining and petrochemicals schemes.
HSE specifications: refining (H₂S, etc.), petrochemicals (product instability, etc.).

SYNERGIES BETWEEN REFINING & PETROCHEMICALS

1 d
Utility exchanges: H₂, gas, fuel.
Supply: ethane, LPG, naphtha, atmospheric gasoil, vacuum distillate.
Product exchanges: pyrolysis gasoline, olefins.
Common treatment of the C4 cuts: BTX (Benzene-Toluene-Xylene) extraction.
Pooling services.

REFINING & PETROCHEMICALS ECONOMICS

0.5 d
Refining and petrochemicals margins and costs.
Location and unit severities effects.
Gains due to synergies.
Case study: economics of a refinery, of a steam cracker and of the integration of both (with some synergies).

Level: PROFICIENCY

Purpose

This course provides a complete review of the main refining and petrochemicals specificities, as well as the identification of the possible synergies. It highlights the economic gains achievable from refining-petrochemicals integration.

Audience

Staff from refining and petrochemicals involved in production, planning, procurement, marketing, management control and investment.

Learning Objectives

Upon completion of the course, the participants will be able to:
► describe the main specificities of the refining and petrochemicals sectors,
► identify the possible synergies between refining and petrochemicals,
► explain the economic challenges and the main factors of these sectors’ profitability,
► analyze the effects of these synergies.

Ways & Means

► Quiz, examples.
► Case studies and exercises in team work.

Learning Assessment

Participants will be evaluated during the training through exercises and case studies.

Prerequisites

► Basic knowledge of refining and petrochemicals unit operations.
► Basic notions of Microsoft Excel.

Expertise & Coordination

In-house or contracted IFP Training trainers having expertise and experience in refining and petrochemicals sectors.

Reference: EAV/SRP
Can be organized as an In-House course.
Contact: em.contact@ifptraining.com

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<thead>
<tr>
<th>Location</th>
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<tbody>
<tr>
<td>Rueil</td>
<td>20 November</td>
<td>21 November</td>
<td>€1,530</td>
</tr>
</tbody>
</table>

This course is also available in French: EAV/IRP. Please contact us for more information.
Economic Framework of Petrochemicals

Level: FOUNDATION

Purpose
This course allows the participants to deepen their knowledge on the petrochemicals sectors and to assess the main economic challenges in these sectors.

Audience
All professionals wishing to improve their understanding of the functioning of petrochemicals industry.

Learning Objectives
Upon completion of the course, participants will be able to:
- analyze the environment and the economic outlook of petrochemicals,
- identify the interfaces between the petrochemicals sectors and the Oil & Gas industry,
- design and use tools for management and optimization of a petrochemical complex in order to increase its efficiency,
- evaluate project profitability.

Ways & Means
- Case studies and exercises in groups.
- Economic optimization using Excel.

Learning Assessment
Participants will be evaluated during the training through exercises and case studies.

Prerequisites
Basic notions of Microsoft Excel.

Expertise & Coordination
In-house or contracted IFP Training trainers having expertise and experience in petrochemicals.

Course Content

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<tr>
<td>World context of petrochemicals.</td>
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<tr>
<td>Main characteristics of petrochemicals.</td>
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<td>Petrochemicals sectors, environment and economic outlook.</td>
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<tr>
<td>Economic impact of refining-petrochemicals integration.</td>
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<tr>
<td>Steam cracker economics.</td>
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<tr>
<td>Case studies: equivalence price of steam cracker feedstocks, calculation of steam cracker income statement.</td>
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<td>Brief technical review of technologies, main actors and markets.</td>
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<tr>
<td>Capacities and new investments.</td>
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<tr>
<td>Challenges of the olefins sector: strong increase of ethylene production, new technologies of ethylene production, etc.</td>
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<tr>
<th>C4 Cut &amp; Aromatics Sectors</th>
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<tbody>
<tr>
<td>Brief technical review of technologies, main actors and markets.</td>
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<td>Capacities and new investments.</td>
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<tr>
<td>Benzene, toluene, orthoxylene and paraxylene markets, derivatives markets.</td>
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<tr>
<td>Economics of benzene-styrene-poly styrene sector.</td>
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<tr>
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<tbody>
<tr>
<td>Brief technical review of technologies (polymerization), main actors and markets.</td>
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<tr>
<td>Capacities and new investments.</td>
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<td>Future and markets trends.</td>
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<td>Case study: introduction to the development of a petrochemicals model matrix (material balances, energy balance, objective function, etc.); team work on operation optimization.</td>
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<td>Case study: steam cracker profitability.</td>
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Reference: EAV/EFP
Can be organized as an In-House course.

Contact: em.contact@ifptraining.com

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This course is also available in French: EAV/EFP. Please contact us for more information.
Profitability Analysis of Downstream Investment Projects

**Level:** PROFICIENCY

**Purpose**
This course provides an in-depth understanding of the concepts behind the theory of capital budgeting, leading to an improvement of the analysis in investment profitability studies.

**Audience**
Managers and staff concerned with decision affecting medium and long-term cash flows (such as investment, disinvestment and acquisitions); people who need to improve their understanding of the theory and the practice of investment analysis.

**Learning Objectives**
On completion of the course, the participants will be able to:
- use tools related to an investment profitability analysis,
- incorporate terms of financing plans in equity profitability analysis,
- build complex computer models for cash flow analysis,
- carry out risk analysis of investment projects.

**Ways & Means**
Case studies and exercises derived from actual refinery situations.

**Learning Assessment**
Participants will be evaluated during the training through exercises and case studies.

**Prerequisites**
Basic notions of Microsoft Excel.

**Expertise & Coordination**
Contracted IFP Training trainers having expertise and experience in profitability analysis of downstream investment projects.

**Course Content**

<table>
<thead>
<tr>
<th>Course Content</th>
<th>3 days</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ECONOMIC CRITERIA</strong></td>
<td>0.75 d</td>
</tr>
<tr>
<td>Value creation, capital cost and discount rate of a company. Equity and debt, Corporate finance and return on capital, ROCE and ROE. Cash flows and discounting principle. Net Present Value (NPV), Internal Rate of Return (IRR), Pay-Out Time (POT), financial exposure, profitability index.</td>
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</tr>
</tbody>
</table>

| **GLOBAL PROFITABILITY ANALYSIS** | 0.75 d |
| Analysis of operating cash flows and economic criteria. Return on capital employed. Profit and Loss accounts and associated project income taxes. Impact of taxation and inflation in profitability investment studies. Choice of an investment program with a limited budget, scarcity cost of capital. |

| **RISK ANALYSIS** | 0.5 d |

| **CASE STUDIES ON INVESTMENT PROFITABILITY** | 1 d |
| Octane improvement: implementation of isomerization and/or alkylation process units. Hydrocracker project. Refinery project. Steam cracker project. |

**Ways & Means**
Case studies and exercises derived from actual refinery situations.

**Learning Assessment**
Participants will be evaluated during the training through exercises and case studies.

**Prerequisites**
Basic notions of Microsoft Excel.

**Expertise & Coordination**
Contracted IFP Training trainers having expertise and experience in profitability analysis of downstream investment projects.

**Reference:** EAV/PDP

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This course is also available in French: EAV/PPA. Please contact us for more information.

**Location Start Date End Date Tuition Fees**

<table>
<thead>
<tr>
<th>Location</th>
<th>Start Date</th>
<th>End Date</th>
<th>Tuition Fees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rueil</td>
<td>4 June</td>
<td>6 June</td>
<td>€2,110</td>
</tr>
</tbody>
</table>

[Contact: em.contact@ifptraining.com]
Marketing & Sales of Lubricants

Level: PROFICIENCY

Purpose
This course provides key knowledge to identify the specificities of lubricants market and to improve performances during production processes and sales development.

Audience
Managers in a new position in lubricants business. Commercial staff moving into the lubricants area or with responsibilities, e.g. in refining, research, planning…, related to lubricants. Staff who already have lubricants experience but who require to extend their general, marketing and strategic knowledge.

Learning Objectives
Upon completion of the course, participants will be able to:
- understand the commercial and marketing environment, covering base oils, additives, blending plants, automotive and industrial sectors, and consumer requirements,
- know the marketing and strategic options available.

Ways & Means
- Industrial experience of the lecturer.
- Interactive lecture.
- Real case studies.

Learning Assessment
Participants will be evaluated during the training through exercises.

Prerequisites
No prerequisites for this course.

Expertise & Coordination
Contracted IFP Training trainers having expertise and experience in marketing and sales of lubricants.

Reference: EAV/MSL. Only available as an In-House course.
Supply Chain Management

Course Content

<table>
<thead>
<tr>
<th>Module</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRODUCTION &amp; PRINCIPLES</td>
<td>0.5 d</td>
</tr>
<tr>
<td>Definition: what is logistics? What is a supply chain?</td>
<td></td>
</tr>
<tr>
<td>Principles of the distribution of petroleum products.</td>
<td></td>
</tr>
<tr>
<td>Review of activities, supply chain link production to consumers.</td>
<td></td>
</tr>
<tr>
<td>Definition of actual tools.</td>
<td></td>
</tr>
<tr>
<td>Implementation of supply chain schema.</td>
<td></td>
</tr>
<tr>
<td>STORAGE MANAGEMENT</td>
<td>0.5 d</td>
</tr>
<tr>
<td>Factors of entry points (refiners and import terminals).</td>
<td></td>
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<tr>
<td>Factor of exit points (to consumers).</td>
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<tr>
<td>“Pull” and “push” modes.</td>
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<tr>
<td>Basic tool for stock management.</td>
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</tr>
<tr>
<td>TECHNICAL ASPECTS OF STORAGE</td>
<td>0.75 d</td>
</tr>
<tr>
<td>Review of the different storages (above ground and underground).</td>
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<tr>
<td>Operation equipment and control.</td>
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<tr>
<td>Stocks measurements.</td>
<td></td>
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<tr>
<td>Losses (tank breathing, product movement, loss control).</td>
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<tr>
<td>Flow measurements. Safety equipment.</td>
<td></td>
</tr>
<tr>
<td>ECONOMICS OF STORAGE &amp; TRANSPORT OPERATIONS</td>
<td>0.75 d</td>
</tr>
<tr>
<td>Cost breakdown for mixed products and petroleum products.</td>
<td></td>
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<tr>
<td>Maintenance policy and costs. Distribution cost pricing policy.</td>
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<tr>
<td>SECURITY STORAGES</td>
<td>0.25 d</td>
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<tr>
<td>Why security storages?</td>
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<tr>
<td>IEA mission. Example in different countries in the world.</td>
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<tr>
<td>Review of technical problems due to long term storage.</td>
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<tr>
<td>SHIPPING</td>
<td>0.25 d</td>
</tr>
<tr>
<td>General features.</td>
<td></td>
</tr>
<tr>
<td>The Market and its players-fixing of the freight rate (Worldscale).</td>
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<tr>
<td>Chartering contracts (voyage charter, COA, time charter…).</td>
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<tr>
<td>Risk control and environmental protection.</td>
<td></td>
</tr>
<tr>
<td>SUPPLY CHAIN DESIGN &amp; METHODOLOGICAL APPROACH</td>
<td>0.5 d</td>
</tr>
<tr>
<td>Location analysis.</td>
<td></td>
</tr>
<tr>
<td>Operational optimization. Status and alternatives’ analysis.</td>
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<tr>
<td>Key Performance Indicators.</td>
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<tr>
<td>Benchmarking context.</td>
<td></td>
</tr>
<tr>
<td>CASE STUDY</td>
<td>0.5 d</td>
</tr>
<tr>
<td>Case study based on an actual situation and containing applications of most of the main principles explained.</td>
<td></td>
</tr>
<tr>
<td>CASE STUDIES (treated all along the course)</td>
<td></td>
</tr>
</tbody>
</table>
Downstream Module

Level: PROFICIENCY

Purpose
This course provides a better understanding of the downstream petroleum sector in its technical, economic, commercial and environmental dimensions (main refining units, key economic data and characteristics, management tools…).

Audience
Recently hired professionals, preferably with an engineering background, about to take up a position in downstream petroleum activities. Staff from other petroleum sectors (upstream, chemicals, etc.) taking up a downstream managerial position or from government agencies with responsibilities for petroleum matters will also benefit from this course.

Learning Assessment
Participants will be evaluated during the training through exercises.

Prerequisites
No prerequisites for this course.

More info
This module is a part of a 16-month master degree program, Petroleum Economics and Management, run by IFP School.

Expertise & Coordination
In-house or contracted IFP Training trainers having expertise and experience in downstream petroleum sector.

Course Content

REFINING
Crude oils and finished products.
Refining processes.
Deep upgrading.
Environmental constraints.
Consequences of the reduction of heavy fuel oil outlets.
Short-term refinery management.
Unit margins.

DECISION SCIENCES
Linear programming: simplex, duality, economic interpretation, etc.
Refining supply and demand.
Refinery investments, costs and margins.
Dynamic programming, non-linear programming, MCP problems in their applications in Energy industries (Gas and Electricity).

DOWNSTREAM MANAGEMENT & SUSTAINABLE DEVELOPMENT
(refining, gas & power)
Mid and downstream business: oil refining, petrochemicals and products.
Utility management: coal, gas and power.
Renewables and Environmental Management.

COMMODITIES MARKETS & TRADING
Introduction to commodities markets (energy, soft, tropical & non-ferrous).
Physical oil markets.
OTC products.
Future markets. Options.
Risk management and hedging.

STRATEGIC MARKETING & MANAGEMENT
Role of marketing in the firm and in the economy.
Marketing organization.
Measuring the firm’s competitiveness.
Designing a development strategy.

ADVANCED ECONOMETRICS
Applied probability and statistics.
Applications of statistical and probabilistic concepts.

INDEPENDENT STUDY
Personal research work.

Reference: EAV/D0M | Can be organized as an In-House course.
Contact: em.contact@ifptraining.com

Location Start Date End Date Tuition Fees
Rueil 15 April 12 July €12,710
Overview of Natural Gas Economics ................................................................. p. 53
Liquefied Natural Gas Economics ........................................................................ p. 54
Liquefied Natural Gas Bunkering ........................................................................ p. 55
Gas Markets & Trading ....................................................................................... p. 56
Contractual Framework of Gas Sale - Purchase & Transportation .................... p. 57
Legal Issues Relating to FSRU Projects .............................................................. p. 58
Negotiating LNG Master Sale & Purchase Agreement ..................................... p. 59
Natural Gas & Electricity Trading ...................................................................... p. 60
Power Generation Development & Energy Management ............................... p. 61
Gas & LNG Economics Certification ............................................................... p. 62
Unconventional Gas Economics ........................................................................ p. 63
Econometrics & Forecasting ............................................................................ p. 64
Overview of Natural Gas Economics

Course Content

GLOBAL GAS SCENE
Importance of natural gas in the world energy balance.
Outlets for natural gas.
Reserves, production, development zones.
International gas markets.
Impact of unconventional gas on the world demand/supply and on gas prices.

STRUCTURE & COSTS OF THE NATURAL GAS CHAIN
Description of the gas chain and associated costs.
Gas treatment and transportation.
Storage costs and distribution costs.
Liquefied Natural Gas (LNG), FLNG, FSRU, small scale LNG.

LONG-TERM NATURAL GAS & LNG CONTRACTS
Contractual framework of Exploration-Production.
Structure and principles of a long term contract.
Principles of take-or-pay, netback, indexation and gas price formulas.
Tolling agreements.

SPOT, FORWARD & FINANCIAL MARKETS
Spot and forward natural gas markets.
Why and how to access those markets?
Prices in the different markets.
Financial contracts, hedging strategies and examples.

GAS MARKETING IN A LIBERALIZED MARKET
Drivers and concepts of liberalization.
Principles of the EU gas directive, progress in various countries, take-or-pay issues.
Role of the regulator, network development, transport, tariffs, etc.
Contractual aspects between suppliers, transporters and distributors.

Ways & Means
- Quizzes.
- Exercises on the costs of gas infrastructures.
- Examples of contracts & calculations on quantities.
- Videos.

Learning Assessment
Participants will be evaluated during the training through quizzes and exercises.

Prerequisites
No prerequisites for this course.

Reference: GER/ONE. Can be organized as an In-House course.
Contact: em.contact@ifptraining.com

Location | Start Date | End Date | Tuition Fees
--- | --- | --- | ---
Rueil | 15 October | 18 October | €2,770

This course is also available in French: GER/EGN. Please contact us for more information.
Liquefied Natural Gas Economics

Course Content

GLOBAL GAS SCENE & LNG MARKETS
Natural Gas uses, reserves, supply and demand.
New outlets for LNG (retail LNG).
International gas trades and importance of the LNG.
Evolution of the LNG trading and pricing.
Main LNG markets: America, Europe and Asia (mature markets: Japan and South Korea and emerging markets: China, India…).
Risks for the different LNG actors: liquefaction, shipping, portfolio players, buyers…
Unconventional gas and its impact on LNG markets.

TECHNICAL ASPECTS OF THE LNG CHAIN
LNG: properties and specifications.
Design of the different parts of the LNG chain.
Liquefaction plants, LNG tankers, regasification terminals.
Main projects of LNG terminals in the world and their exploitation.
Capital expenditures and operating costs.
Economic evaluation of an LNG project.
Business structures of LNG projects:
Classical “Buy/Sell” model.
Processing model.
New trends in the LNG industry:
Floating concepts: FLNG, FSRU.
Small scale LNG.
LNG as a retail product:
Retail LNG.
LNG as a transportation fuel:
Land transportation: road and rail.
LNG bunkering: infrastructures, opportunities and challenges.

LNG CONTRACTS
Main features and important articles in LNG contracts.
LNG pricing: price formulae, indexation and net-back value.
Tolling agreements.
Impact of gas markets liberalization and third-party access to regasification terminals.
Coexistence between long-term contracts and short-term contracts.
Liquefied Natural Gas Bunkering

Level: FOUNDATION

Purpose
This training provides an overview of the economic and contractual aspects of the LNG (Liquefied Natural Gas) bunkering.

Audience
This training is beneficial to professionals from the oil, gas or power industries or shipping sector who need to understand the economic and technical stakes of the LNG bunkering.

Learning Objectives
Upon completion of the course, participants will be able to:
- identify the main LNG markets and their evolution,
- understand the evolutions of the LNG prices,
- identify the stakeholders involved in the LNG bunkering activity,
- evaluate the economics and the technical aspects of the LNG bunkering,
- analyze the key-drivers of the LNG bunkering development.

Ways & Means
- Quizzes.
- Videos.

Learning Assessment
Participants will be evaluated during the training through quizzes and exercises.

Prerequisites
No prerequisites for this course.

Expertise & Coordination
Contracted IFP Training trainer having expertise in technical and economic aspects of the LNG chain.

Course Content

<table>
<thead>
<tr>
<th>Topic</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>LNG SUPPLY &amp; DEMAND</td>
<td>0.5 d</td>
</tr>
</tbody>
</table>
| Evolution of natural gas demand and supply.  
Importance of the LNG in the international gas flows.  
Evolution of the LNG markets:  
Atlantic LNG market (North & South America, Europe).  
Asian-Pacific LNG markets (Japan, South Korea, China, India, Australia…).  
Emerging LNG markets (Africa & Middle East).  
New outlets for LNG (retail LNG). | 0.5 d |
| REGULATION ON LNG AS A FUEL | 0.25 d |
| Evolution of environmental regulations.  
Evolution of specifications for bunker fuels: IMO (International Maritime Organization) regulation, ECA (Emission Control Areas)…  
European regulation.  
Technical solutions (scrubber, diesel, LNG). | 0.25 d |
| TECHNICAL ASPECTS OF LNG BUNKERING | 0.75 d |
| LNG: properties and specifications.  
Design of the different parts of the LNG chain and small scale LNG.  
The stakeholders involved in LNG bunkering: LNG producers, shippers, port operators, utilities, final customers…  
LNG receiving terminals and port infrastructures designed for LNG bunkering.  
Technical evolutions related to small scale LNG for LNG and port operators, and shippers.  
Specific challenges regarding LNG bunkering:  
LNG barge vs. onshore LNG supply.  
The management of LNG storage, partial fill and sloshing.  
Boil-off gas (BOG), reliquefaction and subcooling.  
LNG transfer. | 0.75 d |
| LNG CONTRACTS | 0.5 d |
| Factors impacting LNG prices and their evolutions on the markets.  
Costs of investments of LNG bunkering infrastructures.  
The investments dynamics in road transportation and shipping.  
Costs related to the transportation and distribution networks. | 0.5 d |

Reference: GER/LNGB - Can be organized as an In-House course.  
Contact: em.contact@ifptraining.com  
Location Start Date End Date Tuition Fees
Rueil 4 December 5 December €1,560

This course is also available in French: GER/SGNL. Please contact us for more information.
## Gas Markets & Trading

**Level:** PROFICIENCY

**Purpose**
This training provides a better understanding of the structure, the methods of operation, the uses and the impacts of gas physical, financial and paper trading.

**Audience**
All personnel in the gas or associated industries needing to improve their knowledge and understanding of gas trading and pricing mechanisms.

**Learning Objectives**
Upon completion of the course, participants will be able to:
- analyze the fundamentals of gas supply and regional demands,
- review the different gas trading markets and types of transactions,
- understand the basic structure of long term contracts,
- comprehend the hedging techniques available for protection against fluctuations in prices.

**Ways & Means**
- Examples of contracts.
- Statistical data.

**Learning Assessment**
Participants will be evaluated during the training through quizzes and exercises.

**Prerequisites**
Basic knowledge of natural gas and LNG chain.

**Expertise & Coordination**
Contracted IFP Training trainer having expertise and experience on the management of short-term agreements and negotiation of gas long-term contracts.

### Course Content

<table>
<thead>
<tr>
<th>Module</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAS SUPPLY &amp; DEMAND</td>
<td>0.25 d</td>
</tr>
<tr>
<td>Evolution of gas demand. Projections.</td>
<td></td>
</tr>
<tr>
<td>Gas reserves and production.</td>
<td></td>
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<tr>
<td>Gas producing countries. International supply projects.</td>
<td></td>
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<tr>
<td>Regional gas demands.</td>
<td></td>
</tr>
<tr>
<td>International trade. LNG trading.</td>
<td></td>
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<tr>
<td>LONG TERM CONTRACTS</td>
<td>0.5 d</td>
</tr>
<tr>
<td>Types of contracts.</td>
<td></td>
</tr>
<tr>
<td>Features of long term contracts.</td>
<td></td>
</tr>
<tr>
<td>Contractual quantities, nominations and Take-or-Pay.</td>
<td></td>
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<tr>
<td>Gas pricing: indexation principle.</td>
<td></td>
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<tr>
<td>Concepts of market value and cost plus.</td>
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<tr>
<td>SPOT &amp; FORWARD MARKETS</td>
<td>0.5 d</td>
</tr>
<tr>
<td>Spot markets.</td>
<td></td>
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<tr>
<td>Forward contracts.</td>
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<tr>
<td>North American Hubs.</td>
<td></td>
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<tr>
<td>Spot markets in UK and continental Europe.</td>
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<tr>
<td>Price References and the role of reporting agencies.</td>
<td></td>
</tr>
<tr>
<td>FUTURES MARKETS</td>
<td>0.5 d</td>
</tr>
<tr>
<td>Features of gas Future contracts.</td>
<td></td>
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<tr>
<td>Exchanges and their organization: NYMEX, ICE.</td>
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<tr>
<td>Hedging using Future contracts.</td>
<td></td>
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<tr>
<td>Basis risk and hedging imperfections.</td>
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</tr>
<tr>
<td>RISK MANAGEMENT</td>
<td>0.25 d</td>
</tr>
<tr>
<td>Swaps: principles, basics and characteristics.</td>
<td></td>
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<tr>
<td>Options (call, puts): principles, basics and characteristics.</td>
<td></td>
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<tr>
<td>OTC derivatives: caps, floors, collars.</td>
<td></td>
</tr>
</tbody>
</table>

Reference: GER/GMT

Only available as an In-House course.

Contact: em.contact@ifptraining.com

This course is also available in French: GER/MGN. Please contact us for more information.
### Contractual Framework of Gas Sale - Purchase & Transportation

#### Purpose
This training provides participants with the fundamental features and structures of natural gas long-term sales contracts and transportation agreements.

#### Audience
Professionals, involved in natural gas trading, who need to negotiate or implement natural gas contracts.

#### Learning Objectives
Upon completion of the course, participants will be able to:
- Identify the main articles of long-term natural gas agreements,
- Explain the key points of the commercial clauses,
- Evaluate the principles of natural gas pricing and transportation.

#### Ways & Means
- Examples of contracts,
- Case studies on contracts,
- Simulation of negotiation.

#### Learning Assessment
Participants will be evaluated during the training through quizzes and case studies.

#### Prerequisites
Basic knowledge of natural gas and LNG chain.

#### Expertise & Coordination
Contracted IFP Training trainer having expertise and experience in negotiating gas and LNG long-term contracts as well as managing gas transportation contracts.

<table>
<thead>
<tr>
<th>Course Content</th>
<th>3 days</th>
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</thead>
<tbody>
<tr>
<td><strong>LONG-TERM NATURAL GAS SALES CONTRACTS</strong></td>
<td>2 d</td>
</tr>
<tr>
<td>Primary issues about long-term gas agreements.</td>
<td></td>
</tr>
<tr>
<td>Main natural gas agreements.</td>
<td></td>
</tr>
<tr>
<td>Analysis of the main articles of long-term agreements: Commercial:</td>
<td></td>
</tr>
<tr>
<td>- duration: depletion contract, supply contract, peak shaving, seller's nomination and interruption,</td>
<td></td>
</tr>
<tr>
<td>- quantity: ACQ, DCQ, MDQ, swing factor, excess gas and take-or-pay,</td>
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<tr>
<td>- quality: technical specifications, acceptable limits and non-conformity penalties,</td>
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<tr>
<td>- price: indexation, market value and net-back value,</td>
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<tr>
<td>- delivery point: place, measure, frequency, precision and flexibility,</td>
<td></td>
</tr>
<tr>
<td>Responsibility: force majeure, transfer of rights, expert, arbitration and applicable law.</td>
<td></td>
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<tr>
<td>Operational:</td>
<td></td>
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<tr>
<td>- installation, counting system and analysis, obligation of information, confidentiality, invoicing and payment,</td>
<td></td>
</tr>
<tr>
<td>- entitlement, risk and general dispositions.</td>
<td></td>
</tr>
<tr>
<td>Recent evolution of natural gas long-term contracts: short-term contracts and tolling agreements.</td>
<td></td>
</tr>
</tbody>
</table>

| **NATURAL GAS TRANSPORTATION AGREEMENTS** | 1 d |
| Main principles of natural gas transportation agreements. |
| Analysis of the main articles: |
| - delivery point/redelivery, specifications, |
| - quantity and capacity booking (delivery commitment, booked capacities profile and transportation obligation), |
| - tariff structure (ship-or-pay, fix or variable pricing), |
| - quantities allocation and procedure, gas delivery procedures, quality settlement and removal schedule, |
| - duration, force majeure, tie-in deposit and general dispositions. |
| Recent evolution of gas transportation agreements. |

Reference: GER/CST

Only available as an In-House course.

Contact: em.contact@ifptraining.com

This course is also available in French: GER/CSTS. Please contact us for more information.

www.ifptraining.com
Legal Issues Relating to FSRU Projects

Course Content

THE FSRU PROJECT
Overview of a project (visual illustration).
FSRUs in the LNG industry today (list, role, LNG demand, technology, economics).
Prospects for the near future.

0.25 d

THE CONTRACTUAL SUITE
Structure (commercial, pass through, etc.).
Studies and engineering.
Regulatory.
Permitting.
Site construction.
Shipbuilding contracts.
Ship chartering.
Classification.
Port agreements.
Interconnection.
FSRU services.
LNG imports and gas and LNG sales.

0.5 d

THE FSRU CHARTER
Structure.
Terms relating to the ship.
Terms relating to the operation and maintenance.
Relations with third parties.

0.5 d

FSRU SERVICES
Storage, regasification and send out.
Terminal navigation.
Other services.

0.25 d

LNG & GAS MARKETING
Buying LNG.
Selling and transporting gas.
Other sales.

0.5 d

Prerequisites
No prerequisites for this course.

Reference: GER/FSRUGB - Can be organized as an In-House course.
Contact: em.contact@ifptraining.com

Location Start Date End Date Tuition Fees
Rueil 10 September 11 September €2,530

This course is also available in French: GER/FSRURF. Please contact us for more information.
Negotiating LNG Master Sale & Purchase Agreement

Level: PROFICIENCY

Purpose
This training provides participants with a comprehensive overview of LNG Master Sale & Purchase Agreements and aims to develop or deepen the participants’ understanding and negotiating skills.

Audience
This training will suit new entrants and experienced operators. New entrants will receive sufficient knowledge to negotiate MSPAs in-house and use existing MSPAs to conduct their trading activities. Experienced commercial managers will consolidate their legal knowledge and in-house lawyers will consolidate their commercial understanding of the relevant instruments.

Learning Objectives
Upon completion of the course, participants will be able to:
- understand the contracting method of MSPAs,
- manage and negotiate LNG MSPAs,
- discuss commercial terms both in the context of an MSPA and a confirmation notice.

Ways & Means
- Examples based on real precedents of MSPAs and concluded confirmation notices (anonymized).
- Exercises on LNG MSPAs contracts.
- Drafting and negotiating exercises.

Learning Assessment
Participants will be evaluated during the training through quizzes and case studies.

Prerequisites
No prerequisites for this course.

Expertise & Coordination
Contracted IFP Training trainer having legal expertise and commercial experience on negotiating LNG Master Sale & Purchase Agreements.

Course Content

<table>
<thead>
<tr>
<th>Topic</th>
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<tbody>
<tr>
<td>GENERAL PRINCIPLES OF MSPAS</td>
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<tr>
<td>THE CONFIRMATION NOTICE</td>
<td>0.5 d</td>
</tr>
<tr>
<td>COMMERCIAL TERMS</td>
<td>1 d</td>
</tr>
<tr>
<td>BOILER PLATES</td>
<td>0.5 d</td>
</tr>
<tr>
<td>DRAFTING &amp; NEGOTIATION WORKSHOP</td>
<td>0.5 d</td>
</tr>
<tr>
<td>Marking up a document. Reviewing a confirmation notice. Negotiating selected MSPA clauses.</td>
<td></td>
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</tbody>
</table>

Reference: GER/MSPA
Can be organized as an In-House course.

Contact: em.contact@ifptraining.com

Location | Start Date | End Date | Tuition Fees |
---------|------------|----------|-------------|
Rueil    | 5 November | 7 November | €3,810       |
Natural Gas & Electricity Trading  
Market Risks & Their Operational Management

Level: PROFICIENCY

Purpose
This training provides participants a global and synthetic view on the risk management of the various trading activities of gas and electricity.

Audience
All managers who need to learn the ways of managing risk in the market of natural gas and electricity.

Learning Objectives
Upon completion of the course, participants will be able to:
- assess the risks associated with each phase of the gas trading and electricity,
- understand the different hedging tools of the financial markets and assess their efficiency and limits,
- put in place means of detecting, measuring and controlling the risks through a proper trading organization (procedures, segregation of duties),
- implement control measures, including market risk and credit risk.

Ways & Means
Case studies and examples.

Learning Assessment
Participants will be evaluated during the training through case studies.

Prerequisites
Basic notions of Microsoft Excel.

Expertise & Coordination
Contracted IFP Training trainers having expertise and experience in gas and electricity trading and their associated risks.

Course Content

MARKETS
Main features of gas and electricity markets.

RISK MANAGEMENT
Basic statistics.
Risk typologies:
- Credit risk.
- Market risk.
- Operational risk.
Value at risk.

HEDGING & MODELING
Nature.
Products:
- Futures, forwards, swaps, options.

CASE STUDIES
Compute sensitivities on a gas procurement contract.
Compute the V@R of the contract using Monte Carlo and parametric methods.

Reference: GER/GET. Can be organized as an In-House course.
Contact: em.contact@ifptraining.com

<table>
<thead>
<tr>
<th>Location</th>
<th>Start Date</th>
<th>End Date</th>
<th>Tuition Fees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rueil</td>
<td>2 October</td>
<td>3 October</td>
<td>€2,010</td>
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</tbody>
</table>
Power Generation Development & Energy Management

Level: FOUNDATION

Purpose

This training provides an understanding of the chronology of the development and the management of a power generation fleet of assets, based on the energy strategy of the country, its economic environment and the technical and financial criterion of the power plants installed.

Audience

This training is intended for industrial leaders, investors, buyers, energy suppliers and anyone involved in the energy field (administrations, consulting, audit, banks, regulatory bodies).

Learning Objectives

Upon completion of the course, participants will be able to:
- identify the needs of an energy producing country,
- define and compare energy resources,
- evaluate and arbitrate the technological choices of electricity production,
- explain energy supply and electricity sales contracts,
- explain the EPC and operation & maintenance contracts for the means of energy production,
- structure the development and management of a portfolio of electrical generation assets.

Ways & Means

- Quiz about the different resources and means of energy production.
- Case study on the optimal choice of the electricity production technology.
- Case study on the structuring of a power generation project proposal
- Case study on a power plant portfolio management

Learning Assessment

Participants will be evaluated during the training through quizzes and case studies.

Prerequisites

Basic notions of Microsoft Excel.

Expertise & Coordination

Contracted IFP Training trainer having expertise in technical and economic aspects of power generation development and energy management.

Course Content

3 days

OVERVIEW OF ENERGY RESOURCES 0.25 d
Fossils and renewable primary energy resources: definitions, characteristics and prices.
Global electricity resources: definitions, origins.

ELECTRICITY PRODUCTION 1 d
Power generation: principle, pros & cons.
Electricity network: interconnection and electricity market.
Power plant technologies: description and benchmark of the different technologies of nuclear, thermal, combined cycle, renewables & hydro, hybrids and gas to power solutions (FSRP, network extension).
Technical presentations: fuel supply, advantages/drawbacks/risks, CAPEX, OPEX and project overview.
Impact of the CO₂: regulations, quota systems, prices.

ECONOMIQUES CRITERIA: LCOE 0.25 d
Reminder of economic criterion.
Levelized Cost Of Energy (LCOE): definition and mechanism.
Example and benchmark of different projects.

PROJECT DEVELOPMENT STRATEGY: DECISION CRITERION 0.5 d
Needs of an industrial company.
Needs of an electricity supplier.
Decision criterion.
Case study: a case study on the optimal choice of the electricity production technology according to the political, technical and financial environment considered.

PROJECT DEVELOPMENT 0.5 d
Project management and organization: invitation to tender, organization and planning, selection of suppliers, chronology of the development and construction phases, cost structuring and financing.
Contractual structuring: fuel supply contract, electricity sales contract, operating and maintenance structure.
Case study: exercise on the structuring of a power generation project proposal.

POWER GENERATION & ASSET MANAGEMENT 0.5 d
Introduction to energy portfolio management and price risk.
Operational excellence: asset management, operation and maintenance optimization, local and corporate management.
Case study: exercise and simulation of power generation portfolio management.

Reference: GER/PGD
Can be organized as an In-House course.
Contact: em.contact@ifptraining.com

<table>
<thead>
<tr>
<th>Location</th>
<th>Start Date</th>
<th>End Date</th>
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<tbody>
<tr>
<td>Rueil</td>
<td>25 June</td>
<td>27 June</td>
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</table>

This course is also available in French: GER/GPE. Please contact us for more information.
Graduate Certificate

Gas & LNG Economics Certification

Level: FOUNDATION

Purpose

The certifying training is part of a professional career move to a position that requires in-depth knowledge of the economic and contractual stakes of the Gas & LNG chain.

Learning Objectives

Upon completion of the course, participants will be able to:
- be aware of the components of the global gas scene,
- specify the characteristics of natural gas and detail the natural gas chain,
- be aware of the technical, operational and commercial conditions concerning shipping,
- make investment profitability analysis in the gas sector,
- identify the main clauses of gas and LNG agreements,
- understand the operational responsibilities of the actors from the chain Front-to-Back.

Ways & Means

- Quiz.
- Case studies simulated on computers.
- Exercises on contracts and simulation of negotiation.

Learning Assessment

The assessment system is made up of two (02) elements:
- An entry assessment, covering all topics treated during the training.
- In order to sanction the certification, at the end of each module from 1 to 7, participants must pass written/oral exams, lasting one hour and a half.

Prerequisites

Are allowed to take part to this certified training only applicants having:
- a Master’s degree or equivalent,
- an engineering degree with a minimum of 2 years working experience,
- a Bachelor’s degree with minimum of 5 years working experience.

Applicants must provide proof validating these prerequisites.

Why an IFP Training Certification?

- An international recognition of your competencies.
- A Graduate Certificate delivered.
- An expertise confirmed in Gas & LNG Economics.
- Ready-to-use skills.

Expertise & Coordination

Permanent and contracted IFP Training trainers having expertise in technical and economic aspects of the gas and LNG chain.

Course Content (35 days)

Module 1: NATURAL GAS: TYPES, SPECIFICATIONS & PROCESSING TECHNOLOGIES

Fundamentals of natural gas composition, characteristics, production and field processing.
Technical issues and specific constraints of natural gas transport and storage.
Review of the various end-user markets available for valorizing natural gas.
Key natural gas chain economic issues.

Module 2: UPSTREAM ECONOMICS & MANAGEMENT

Key issues and constraints in the contractual negotiations between host countries, NOCs and IOCs.
Overview and analysis of the different tax systems and contractual frameworks in existence.
Main contractual and fiscal clauses of E&P contracts.

Module 3: GAS & LNG CHAIN ECONOMICS

Natural gas in the world energy balance, and the strategies of the main industry actors.
Outlier of natural gas and the new trends in gas and LNG industry.
Main technical, economic and contractual features of the natural gas value chain, from the production well to the final consumer.
Gas and LNG markets and their evolution (prices, hedging...).

Module 4: CONTRACTUAL FRAMEWORK OF GAS & LNG MARKETING

Main articles of long-term natural gas and LNG agreements.
Key points of the commercial clauses.
The principles of natural gas pricing and transportation.
The technics of negotiation of Master Sale and Purchase Agreements.

Module 5: SHIPPING: GENERAL FEATURES, CHARTERING CONTRACTS & OPERATIONS

Legal framework.
Contractual and fiscal framework.
Main clauses of petroleum contracts.
Nautical capacity and technical criteria of a ship in particular for the transport of hydrocarbons.
Risks associated with maritime activities (boating, environmental, policy...), as well as the regulations and related procedures.
Operational and strategic constraints that apply to the ship-owner or the carrier.
Negotiation in the best possible of conditions contract litigations deriving from oil products marine operations.
The tanker chartering market.

Module 6: INVESTMENT PROFITABILITY STUDIES IN THE GAS INDUSTRY

Development of advanced computer models for the economic evaluation Gas projects.
Incorporation of specific financing plan through equity profitability analysis.
Analysis of the economic results and carry out sensitivity analysis.
Incorporation of the risk and uncertainty in the economic evaluation of Gas projects.

Module 7: OPERATIONAL MANAGEMENT OF GAS TRADING

Description of the activities of each actor from Front to Back (stakes and technics used).
Evaluation of the associated risks to each phase of the gas trading.
Understanding of the tools to hedge the risks on the financial markets and evaluation of their efficiency as well as their limits.
Means of detection, measurement, and control of the risks thanks to a trading organization.

Reference: GER/GCEGGB

Only available as an In-House course.
Contact: em.contact@ifptraining.com

This course is also available in French: GER/GCEGFR. Please contact us for more information.
Unconventional Gas Economics
Economics & Project Analysis

Level: FOUNDATION

Purpose
To make investment decision related to unconventional gas projects.

Audience
People involved in unconventional gas project analysis.

Learning Objectives
Upon completion of the course, the participants will be able to:
- understand the characteristics of shale, tight and coal bed methane,
- describe the steps, technologies and costs to develop an unconventional gas project,
- understand the importance of the concept and calculation of net present value and internal rate of return in decision making,
- introduce to the economic evaluation of unconventional gas play,
- compare and evaluate unconventional gas developments,
- appreciate the impact of the learning curve on the profitability,
- locate the unconventional gas resources and what are the situation and the challenges country per country,
- define the impact of unconventional gas on price formulae and the markets unbalance,
- identify the impact of unconventional gas on economies and industries,
- identify the main unconventional gas contractors and operators and it strategy,
- describe the environmental risks related to the production of unconventional gas.

Ways & Means
- Game on the unconventional exploration and production technics.
- Videos.
- Unconventional gas project analysis, sensitivity study and decision analysis.
- Hedging strategy.

Learning Assessment
Participants will be evaluated during the training through quizzes and exercises.

Prerequisites
No prerequisites for this course.

Expertise & Coordination
Permanent and contracted IFP Training trainers having expertise in technical and economic aspects of the natural gas chain.

Course Content

<table>
<thead>
<tr>
<th>Topic</th>
<th>Duration</th>
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<tbody>
<tr>
<td>UNCONVENTIONAL GAS CHARACTERISTICS</td>
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</table>
| Conventional and unconventional gas (shale gas, tight gas, coal bed methane, hydrates).
| Resources and reserves. |
| UPSTREAM STEPS, TECHNICS & COSTS | 0.8 d |
| Geology, permit negotiation and geophysics.
| Identification and site preparation.
| Directional and horizontal drilling.
| Hydraulic fracture stimulation and micro-seismic fracture mapping.
| Decommissioning. |
| ECONOMIC ANALYSIS & INVESTMENT DECISION | 2 d |
| Production profile characteristics (Arps Equation and EUR).
| Associated products value.
| Economic variables associated with shale gas developments (F&D, Drilling, Fracking, T&F, LOE).
| Fiscal impact (concession, PSA).
| Economic evaluation criteria.
| Shale gas project cash flow analysis.
| Impact of the learning curve on the profitability.
| Hedging strategy (price, currency, toll fees).
| Financing issues and needs.
| Introduction to risk analysis (sensitivity analysis, decision tree and Monte Carlo analysis). |
| ECONOMIC & STRATEGIC IMPACT OF UNCONVENTIONAL GAS REVOLUTION | 0.75 d |
| Panorama of unconventional gas developments: North & Latin America, Europe, Africa & Middle East, Asia Pacific.
| Unconventional gas market (contractors and size of the market).
| Strategy of the O&G companies (small and big independents, IOC, NOC).
| Impact on the gas trades and gas price.
| Indirect impacts on energy prices (oil price, coal price).
| Economic impact on industries and government budgets (focus on petrochemicals, refining, and exporting and importing economies). |
| ENVIRONMENTAL IMPACT & ISSUES | 0.25 d |
| Environmental issues:
  - Water consumption, water treatment & waste issues.
  - Surface footprint and noise.
  - Greenhouse gas emissions.
  - Seismic events.
| The protagonists of the debate and their communication strategy:
  - The pro (O&G producers and contractors, organization, energy consumers).
  - The cons (environmental and anti-globalization associations, renewable industry, some consumers). |

Reference: GER/UCGI
Only available as an In-House course.

Contact: em.contact@ifptraining.com

www.ifptraining.com
Econometrics & Forecasting

Level: PROFICIENCY

Purpose
To be able to use econometric tools in order to determine correlations and adjustments between physical or economical series and to make forecasts and simulations.

Audience
Engineers, economists and financiers from all sectors.

Learning Objectives
Upon completion of the course, the participants will be able to:
- use the main econometric techniques,
- perform an econometric estimation,
- develop models and make forecasts, in particular in the energy sector and on financial markets.

Ways & Means
Applications performed on computer (statistical tests, development of econometric models, forecasting, simulation, highlighting cointegration and causality relationship, etc.) using Excel and Eviews.

Learning Assessment
Participants will be evaluated during the training through case studies.

Prerequisites
Basic knowledge in the areas of statistics and Excel software.

Expertise & Coordination
Contracted IFP Training trainers having expertise and experience in econometrics and forecasting.

Course Content 5 days

STATISTIC BASIS 0.5 d
Descriptive statistics (mean, median, standard-deviation, etc.), indices (Laspeyres, Paasche, Divisia).
Statistical tests (normality, student, Fisher).
Application: energy data set (quantities, prices).

LINEAR REGRESSION MODELS & FORECASTING 1.5 d
Simple and multiple linear regression models, ordinary least square estimator, R2.
Statistical tests validating econometric models: autocorrelation (Durbin-Watson, Lagrangian multiplier), heteroscedasticity (White and Breusch-Pagan), multicollinearity (BKW).
Structural change on linear regression model (Chow test, Brown-Durbin & Evans test).
Application: analysis of the substitution between oil, gas and electricity.
Principle of forecasting with an econometric model (properties of the estimator, prediction interval).
Application: forecasts on energy demand model.

TIME SERIES ANALYSIS & FORECASTING 1 d
Time series model.
Smoothing techniques for short run forecasts: extrapolation techniques (moving average, time series decomposition with trend and seasonal pattern).
Application: monthly energy demand series (with a seasonal pattern), forecast over 12 month.
ARIMA models (AutoRegressive Integrated Moving Average), tests assessing the stochastic processes (number of autoregressive and moving average lags, stationnarity).
Application: ARIMA model simulations.

TIME SERIES RELATIONSHIP: COINTEGRATION & CAUSALITY 1 d
Introduction to cointegration techniques: unit root tests (Dickey-Fuller, Phillips-Perron, KPSS), Engle and Granger model, long term equilibrium, Error Correction Model (ECM).
Causality test.
Application: cointegration techniques to Oil & Gas markets.
Cointegration with multiple relationship: Johanson test (max. eigenvalue and Trace test) on a VAR (Vectorial AutoRegressive) model.
Application: modeling the equilibrium between prices over several market places.
Structural changes on cointegration model: long term and short term dynamic (Perron test, Gregory and Hansen test).

CHANGES OF VOLATILITY ON ENERGY MARKET 1 d
ARCH model (AutoRegressive Conditional Heteroscedastic) and generalization.
Application: modeling volatility changes in the short term dynamic and on the equilibrium of Oil & Gas markets.

Reference: GER/ECF  
Can be organized as an In-House course.
Contact: em.contact@ifptraining.com

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<tr>
<th>Location</th>
<th>Start Date</th>
<th>End Date</th>
<th>Tuition Fees</th>
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<tbody>
<tr>
<td>Rueil</td>
<td>18 November</td>
<td>22 November</td>
<td>€3,400</td>
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</table>

This course is also available in French: GER/ECP. Please contact us for more information.
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<tr>
<th>Topic</th>
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<td>Financial Management of an International Oil &amp; Gas Company</td>
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<td>Upstream Budget Practice</td>
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<td>Upstream Contracts Audit</td>
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<td>Upstream Auditing Certification</td>
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<td>Investment Funding in the Oil &amp; Gas Industry</td>
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<td>Investment Profitability Studies in the Oil &amp; Gas Industry</td>
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<td>Investment Projects Governance &amp; Assurance</td>
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<tr>
<td>Enterprise Risk Management for Oil &amp; Gas Companies</td>
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<tr>
<td>Governance of an E&amp;P Company</td>
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</table>
## Strategic Management in International Oil & Gas Business

**Essential Business Management Skills for Oil & Gas Professionals**

### Level: FOUNDATION

#### Purpose
The participants will participate actively as well in the various lectures they will have to cover the economics of the Oil & Gas value chain as well as the management tools used in the industry; putting everything back in perspective with their company’s business.

#### Audience
The course is designed for high potential executives with minimum of two years experience. It is suitable to both technical and non-technical professionals who seek to develop good business awareness and understanding of the Oil & Gas industry.

#### Learning Objectives
Upon completion of the course, participants will have:
- seen the main economic, market, physical, environmental and political forces driving energy demand, supply, and prices.
- connected the key links and terms of the Oil & Gas industry, from the exploration well to the final products,
- understood the fundamental management tools and decision processes in an international Oil & Gas company,
- applied practical decisions and experienced the risk of doing business in the Oil & Gas industry on a worldwide scale through a computer “Strategic Management Game”.

#### Ways & Means
This course is built on interactive presentations, exercises and team games. Working in competing teams, participants have to:
- evaluate and anticipate the driving factors of oil prices through the “Oil price game”.
- rebuild the E&P chain of an offshore project.
- take a quiz on natural gas business.
- price a cargo of crude oil.
- calculate refining margins and the main economic indicators.
- evaluate the economic profitability of an oil field development, gas pipeline & LNG projects.
- implement business decisions & evaluate its impact through the use of an Excel simulator “Strategic Management Game”.

#### Learning Assessment
Participants will be evaluated during the training through quizzes and case studies.

#### Prerequisites
Participants need to be comfortable with the use of Microsoft Excel.

#### Expertise & Coordination
IFP Training trainers having expertise and experience in Oil & Gas business.

### Course Content

<table>
<thead>
<tr>
<th>Topic</th>
<th>Description</th>
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<tbody>
<tr>
<td>INTERNATIONAL OIL ENVIRONMENT</td>
<td>0.5 d</td>
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<tr>
<td>UPSTREAM ECONOMICS</td>
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<tr>
<td>NATURAL GAS ECONOMICS</td>
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<tr>
<td>TRANSPORT &amp; INTERNATIONAL OIL MARKETS</td>
<td>0.5 d</td>
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<tr>
<td>REFINING ECONOMICS &amp; PETROCHEMICALS</td>
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<tr>
<td>PROJECT ECONOMICS &amp; DECISION ANALYSIS TOOLS</td>
<td>1.5 d</td>
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<tr>
<td>STRATEGIC BUSINESS GAME</td>
<td>1 d</td>
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</tbody>
</table>

**Reference:** GIP/SBA  
Only available as an In-House course.  
Contact: em.contact@ifptraining.com
Financial Management of an International Oil & Gas Company

**Level:** PROFICIENCY

**Purpose**
This course provides a deeper knowledge on accounting in the oil industry and to introduce the tools of financial analysis and management.

**Audience**
Upstream professionals who would like to understand the bases of financial analysis in the upstream Oil & Gas activities.

**Learning Objectives**
Upon completion of the course, participants will be able to:
- appreciate the specificities of the international petroleum accounting standards,
- define fundamentals of cost analysis and control,
- analyze the financial situation of a company,
- use the methodology and techniques of audit.

**Ways & Means**
Case studies and exercises.

**Learning Assessment**
Participants will be evaluated during the training through quizzes and case studies.

**Prerequisites**
Basic knowledge in the areas of financial accounting, management accounting or corporate finance.

**Expertise & Coordination**
Contracted IFP Training trainers having expertise and industrial experience in upstream project accounting & finance.

## Course Content

<table>
<thead>
<tr>
<th>Module</th>
<th>Title</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MODULE 1</strong></td>
<td><strong>FUNDAMENTALS OF OIL &amp; GAS ACCOUNTING &amp; COSTS CONTROL METHODOLOGY</strong></td>
<td>10 days</td>
</tr>
<tr>
<td><strong>E&amp;P fundamentals</strong></td>
<td>Overview.</td>
<td>0.5 d</td>
</tr>
<tr>
<td><strong>Accounting standards</strong></td>
<td>Accounting principles: Accounting system and principles, accounting plan, financial statements, valuation of assets. Depreciation and provision, income statement, balance sheet, cash flow statement and cash flow table. International accounting standards: IFRS and FAS, US GAAP, SEC requirements. Specific cases: relinquishment and site restoration, deferred taxes, potential badwill of fixed assets, etc.</td>
<td>2.5 d</td>
</tr>
<tr>
<td><strong>Cost analysis &amp; cost control</strong></td>
<td>Fundamentals of cost analysis: Direct and indirect costs, fixed and variable costs, total cost, etc. Methodology of cost allocation. Standard costs: purpose, identification and implementation. Budget and cost control: Cost accounting definition and implementation. Labor costs, inventories, etc.</td>
<td>2 d</td>
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</table>

<table>
<thead>
<tr>
<th>Module</th>
<th>Title</th>
<th>Duration</th>
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<tbody>
<tr>
<td><strong>MODULE 2</strong></td>
<td><strong>FUNDAMENTALS OF FINANCIAL MANAGEMENT &amp; AUDIT METHODOLOGY</strong></td>
<td>10 days</td>
</tr>
<tr>
<td><strong>External &amp; internal financial audit</strong></td>
<td>Methodology and techniques of financial audit. Define an audit program. Evaluate the quality of internal control. Audit of the main business lines (inventories, procurement, fixed assets, payroll). Conduct of the audit. Audit report.</td>
<td>2 d</td>
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</tbody>
</table>

Reference: GIP/FMC

<table>
<thead>
<tr>
<th>Contact:</th>
<th><a href="mailto:em.contact@ifptraining.com">em.contact@ifptraining.com</a></th>
</tr>
</thead>
</table>

This course is also available in French: GIP/MFP. Please contact us for more information.

Contact: em.contact@ifptraining.com
Upstream Budget Practice

Level: PROFICIENCY

Purpose
To allow the participants to go through the full budgetary process from information gathering to budget presentation.

Audience
Upstream professionals who need to fully master the E&P budgeting process.

Learning Objectives
Upon completion of the course, participants will be able:
- to list the required information for the budgeting process,
- to draft the required financial statements,
- to set up monitoring and performance parameters.

Ways & Means
Budget preparation, set up and presentation through workshop practice with a subject-matter expert.

Learning Assessment
Participants will be evaluated during the training through quizzes and case studies.

Prerequisites
Basic knowledge of the financial and accounting environment of E&P.

Expertise & Coordination
Contracted IFP Training trainers having expertise and industrial experience in upstream project accounting and finance.

Course Content

5 days

<table>
<thead>
<tr>
<th>PURPOSE &amp; REQUIRED FINANCIAL STATEMENTS</th>
<th>1 d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose of the budgetary process.</td>
<td></td>
</tr>
<tr>
<td>Main characteristics of the financial statements required for budget preparation.</td>
<td></td>
</tr>
<tr>
<td>Projected balance sheet.</td>
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<tr>
<td>Projected income-statement.</td>
<td></td>
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<tr>
<td>Projected uses and sources of funds.</td>
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<table>
<thead>
<tr>
<th>LISTING PROCESS FOR REQUIRED INFORMATION COLLECTION</th>
<th>1 d</th>
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<tbody>
<tr>
<td>Type of required information.</td>
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<tr>
<td>Related company departments.</td>
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<tr>
<td>Data collection methodology.</td>
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<tr>
<td>Data collection.</td>
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<table>
<thead>
<tr>
<th>FINANCIAL STATEMENTS DRAFTING &amp; BUDGET</th>
<th>2 d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial statements drafting.</td>
<td></td>
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<tr>
<td>Main data consolidation.</td>
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</tr>
<tr>
<td>Budget presentation report preparation.</td>
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<table>
<thead>
<tr>
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</thead>
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<tr>
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<td></td>
</tr>
<tr>
<td>Whistleblower signals.</td>
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</table>

This course is also available in French: GIP/PBA. Please contact us for more information.

Reference: GIP/UBP

Only available as an In-House course.

Contact: em.contact@ifptraining.com

This course is also available in French: GIP/PBA. Please contact us for more information.
Upstream Contracts Audit

Level: PROFICIENCY

Purpose
This course provides participants a detailed understanding of principles and methods of upstream contracts audit.

Audience
For upstream personnel who will conduct joint-venture audits, or will be audited by partners in a joint venture, for State auditors in charge of auditing Oil & Gas contracts, for executives who look for a comprehensive understanding of issues linked to contractual audit.

Learning Objectives
Upon completion of the course, participants will be able to:
- prepare and lead a contractual audit,
- identify the risks related to accounting in Oil & Gas industry,
- set up an audit structure.

Ways & Means
Case studies and exercises based on recent industrial cases.

Learning Assessment
Participants will be evaluated during the training through quizzes and case studies.

Prerequisites
Basic knowledge of the contractual and financial framework of E&P and/or a minimum 5 to 10 years’ experience in financial functions in the E&P sector.

Expertise & Coordination
Contracted IFP Training trainers having expertise and experience in auditing of exploration-production activities.

Course Content

CONTRACTUAL ACCOUNTING
Joint Operating Agreements and accounting appendix.
Upstream tax issues.
Production Sharing Contracts (PSC) and accounting procedures.
Joint costs and recoverable costs.
At cost principle and implementation.
Bases of operator’s cost accounting.

SPECIFICITIES OF JOINT VENTURE AUDIT
Audit rights.
Organization of the audit: partners, operator.
Auditing respect of at cost principle.
Exercises.

SPECIFICITIES OF STATE AUDIT
Audit rights.
Organization of the State audit, auditors qualification.
Articulation between joint-venture audit and State audit.
Key elements of contract and accounting procedure.
Case study.

CONDUCTING A CONTRACT AUDIT
Audit preparation.
During the audit.
Conclusion of the audit.
Audit supervisor role.
Audit report and follow-up.

Reference: GIP/UCA
Can be organized as an In-House course.

Contact: em.contact@ifptraining.com

Location | Start Date | End Date | Tuition Fees
--- | --- | --- | ---
Rueil | 2 December | 6 December | €3,680

This course is also available in French: GIP/UCAE. Please contact us for more information.
Advanced Certificate
Upstream Auditing Certification

Course Content

**CONTRACTUAL & ACCOUNTING FRAMEWORK OF E&P OPERATIONS**
- Petroleum contracts fundamentals.
- Accounting principles of upstream operations.

**UPSTREAM AUDITING CONTEXT**
- Typology: petroleum contracts auditing - JOAs auditing - Petroleum aspects of internal auditing.
- Auditor qualifications and professional conduct rules.
- Auditing norms.
- Tools and techniques.

**UPSTREAM COST AUDITING (recoverable or shared)**
- Cost items analysis.
- Cost accounting exercises.

**SPECIFICITIES OF PETROLEUM CONTRACT AUDITING**

**SPECIFICITIES OF JOA AUDITING**
- Internal control and budgetary procedures.

**AUDIT MANAGEMENT**
- Preparation, roll-out and follow-up.

**GOVERNANCE & FINANCIAL SECURITY**

**JURY**

Ways & Means
- Modules are delivered by upstream auditing professionals. The evaluation process includes a mock case preparation, roll-out and follow-up of an audit.

Learning Assessment
- Participants will be evaluated during the training through quizzes and case studies.

Prerequisites
- Participants with a Bachelor’s degree in Engineering or Business with 5 years of management experience in the Oil & Gas industry are ideal candidates. In addition, fundamental knowledge of financial (general accounting, financial statements, financial accounting) and upstream petroleum contracts is required and will be assessed through a preliminary test.

Why an IFP Training Certification?
- An international recognition of your competencies.
- An Advanced Certificate delivered.
- An expertise confirmed in Upstream Auditing.
- Ready-to-use skills.

More info
- * Duration includes one day of assessment.

Expertise & Coordination
- Contracted IFP Training trainers having expertise and experience in auditing of exploration-production activities.

Reference: GIP/ADVUA

**CERTIFICATION**

Only available as an In-House course.

Contact: em.contact@ifptraining.com

This course is also available in French: GIP/ADVUMM. Please contact us for more information.
# Investment Funding in the Oil & Gas Industry

## Level: FOUNDATION

### Purpose
This course initiates participants to the objectives and methods of companies’ financial management and their application to investment projects funding in the Oil & Gas industry.

### Audience
This course is aimed at finance staff taking responsibilities in Financing/project funding; technical staff, economists involved in project management and wishing to better understand financing constraints.

### Learning Objectives
Upon completion of the course, participants will be able to:
- Identify the funding requirements of a company.
- Choose an optimal combination of financial resources.
- Understand the criteria for choosing how to fund a major investment project.
- Understand the impact of funding decisions in investment evaluation.

### Ways & Means
Case studies and exercises.

### Learning Assessment
Participants will be evaluated during the training through quizzes and case studies.

### Prerequisites
Basic knowledge in business finance management and investment evaluations (such as provided by the Investment Profitability Analysis course). Participants need to be comfortable with the use of Microsoft Excel.

### Expertise & Coordination
Contracted IFP Training trainers having expertise and industrial experience in Oil & Gas accounting & finance.

## Course Content

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<tr>
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<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FINANCIAL MANAGEMENT OF A COMPANY</strong></td>
<td>0.75 d</td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td><strong>MEETING FINANCING NEEDS</strong></td>
<td>0.75 d</td>
</tr>
<tr>
<td>Own funds: equity and quasi equity. Debt structure choice. Borrowings, direct market access.</td>
<td></td>
</tr>
<tr>
<td><strong>FINANCING MAJOR INVESTMENT PROJECTS</strong></td>
<td>1 d</td>
</tr>
<tr>
<td><strong>PROJECT FINANCING</strong></td>
<td>1 d</td>
</tr>
<tr>
<td><strong>IMPACT OF PROJECT SPECIFIC FINANCING ON ECONOMIC EVALUATION</strong></td>
<td>0.5 d</td>
</tr>
<tr>
<td>Geared vs. ungeared economics. Financial leverage.</td>
<td></td>
</tr>
</tbody>
</table>

### Reference:
GIP/IFI

- Only available as an In-House course.
- This course is also available in French: GIP/FPI. Please contact us for more information.

Contact: em.contact@ifptraining.com

www.ifptraining.com
Investment Profitability Studies in the Oil & Gas Industry

Course Content

**ECONOMIC EVALUATION CRITERIA**
0.5 d
Corporate finance, capital costs and discount rate of the company.
Construction of project cash flows schedule.
Economic criteria for project evaluation: net present value (NPV), internal rate of return (IRR), payback period, etc.
*Case studies: development of an oil field under concession.*

**GLOBAL PROFITABILITY ANALYSIS**
1 d
Methodology for assessing the global profitability of capital invested.
Impact of taxation and inflation in profitability investment studies.
Choosing an investment program with a limited budget, scarcity cost of capital.
*Case studies: accelerating production project (EOR) project of upgrading a refinery (Hydrocracking unit).*

**ECONOMIC COST ANALYSIS**
0.5 d
Accounting cost vs. economic cost, after-tax cash outflows.
Economic depreciation, unit economic cost, optimal economic lifetime.
*Cases studies: issues related to purchasing of equipment and definition of an optimal economic lifetime.*

**EQUITY PROFITABILITY ANALYSIS**
0.5 d
Financing Oil & Gas projects, project finance and B.O.T. structures.
Various financing plans and debt repayment.
Analysis of equity cash flows, return on equity capital, financial leverage.
*Case studies: construction of LNG plant and gas pipeline projects with specific financing.*

**RISK ANALYSIS**
0.5 d
Introduction to risk analysis and risk discount rate: sensitivity analysis, Spider and Tornado diagrams.
Probability of success, economic risk analysis in oil exploration.
Economic study of an exploration project using Min, Mode and Max scenarios.
*Case studies: valuation of a decision to acquire information (seismic or drilling) and pricing of an exploration bloc.*

**CASE STUDIES**
Oil field development project.
Acceleration of production project with or without EOR (Enhanced Oil Recovery).
Isomerization vs. alkylation project.
FCC project (Fluid Catalytic Cracking).
Project of upgrading a refinery.
Hydrocracking unit project.
Polypropylene Plant Project.
LNG plant project with specific financing.
Gas pipeline project with specific financing.
Service station modernization project.
Gas-fired power plant project.
Valuation of a decision to acquire information (seismic or drilling).
Pricing of an exploration bloc.

---

Reference: GIP/IPS

*Can be organized as an In-House course.*

Contact: em.contact@ifptraining.com

<table>
<thead>
<tr>
<th>Location</th>
<th>Start Date</th>
<th>End Date</th>
<th>Tuition Fees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rueil</td>
<td>23 April</td>
<td>25 April</td>
<td>€2,150</td>
</tr>
</tbody>
</table>

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*This course is also available in French: GIP/ERP. Please contact us for more information.*
# Investment Projects Governance & Assurance

## Level: PROFICIENCY

### Purpose

This course provides a better understanding of industry best practices to structure governance and assurance activities related to material investment (or divestment) energy projects to improve the robustness of business cases, and to improve chances of delivery of the original assumptions. The course focuses on new business development activities up to final investment decision. It includes as well a review of how to structure a learning feedback loop post projects implementation.

### Audience

This course is aimed primarily at decision makers with accountability to assess and approve material investment (or divestment) proposals, whether in the private or public sector, investment projects/business opportunity managers, finance/economics managers overseeing investment projects valuation and their staff, and governance and assurance managers and their staff.

### Learning Objectives

Upon completion of the course, participants will be able to:

- understand the pitfalls attached to material investment (or divestment) projects governance (up to final investment decision), and to structure the governance of these, to ensure better project assessment, decision making, and value delivery,
- develop and implement assurance processes to enhance chances of value delivery,
- select from a variety of post investment assurance tools, to embed in their organization a learning feedback loop for future projects.

### Ways & Means

Case studies, exercises and role playing.

### Learning Assessment

Participants will be evaluated during the training through quizzes and case studies.

### Prerequisites

No prerequisites for this course. An initial experience of investment projects assessments or investment project development will however add value to participants.

### Expertise & Coordination

Contracted IFP Training trainers having expertise and industrial experience in Oil & Gas governance and assurance.

## Course Content

### OVERALL INVESTMENT PROJECT OVERSIGHT STRUCTURE 1 d

Designing project governance: definition of roles and responsibilities.

Establishing clear decision gates with adequate risk assessment at each.

Defining the typical components of investment mandates at various phases of a project.

Which economic criteria to look at: reminder on economic criteria interpretation and related pitfalls.

High-level governance pitfalls:
- Decision making bias, reward system.
- Front end loading, handover from project team to operations team.
- Risk analysis and stakeholder mapping.

### INVESTMENT PROJECT VALUE ASSURANCE 1 d

Assurance team composition, when to conduct assurance.

Which focus area: i.e. value focused, risked based, adapted to each project phase.

Common risk analysis frameworks (e.g. PESTLE).

Specific assurance issues related to projects’ economic evaluations.

### THE DECISION REVIEW BOARD GAME 0.5 d

Participants will role play assessment and challenge of a project, being in turn decision review board member or project team leader aiming to convince the decision review board/investment committee.

### POST INVESTMENT ASSURANCE & LEARNINGS CAPTURE TO FEED INTO FUTURE PROJECTS 0.5 d

Investment project lookbacks.

Post investment reviews.

Tools and considerations about embedding learnings.

### CASE STUDY & EXERCISES

Participants will be asked to work on a case study and exercises along the course in addition to role playing (“Decision Review Board game”).

Reference: GIP/PGA

Only available as an In-House course.

Contact: em.contact@ifptraining.com
Enterprise Risk Management for Oil & Gas Companies

Level:
Purpose
This course provides the most recent elements and reflections on management of integrated risk and control frameworks “Enterprise Risk Management”.

Audience
Professionals in charge of implementing internal controls and procedures, managing risks, including with regards to Ethics and Compliance; managers and independent board members wanting to know best practices. Technical staff moving to broader more senior management positions.

Learning Objectives
Upon completion of the course, participants will have:
- obtain a global understanding of the problems attached to companies’ governance,
- know the most recent solutions developed and implemented in risk and control framework of companies,
- review and improve their department/business unit/division or company’s risk management framework.

Ways & Means
Case studies.

Learning Assessment
Participants will be evaluated during the training through quizzes and case studies.

Prerequisites
5 to 10 years’ experience in the Oil and Gas industry.

Expertise & Coordination
Contracted IFP Training trainers having expertise and industrial experience in Oil & Gas risk and control management.

Course Content

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<tr>
<th>Business Drivers &amp; Corporate Governance Requirements</th>
<th>0.75 d</th>
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</thead>
<tbody>
<tr>
<td>Best practice corporate governance requirements internationally. The respective roles of the boards, company, management and shareholders in these. Risk and audit committees.</td>
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<table>
<thead>
<tr>
<th>Identifying, Assessing &amp; Mitigating Enterprise Level Risks</th>
<th>1.25 d</th>
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</thead>
<tbody>
<tr>
<td>Understanding risk appetite. Risk identification methodology and tools, integrating risks with business strategy. Risk quantification (impact vs. likelihood), value at risk. Developing risk responses (4Ts, bow tie), the various types of controls (preventative and detective….).</td>
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<tr>
<th>Risk Culture</th>
<th>1 d</th>
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<thead>
<tr>
<th>Dealing with Reputation, Compliance &amp; Crisis Management</th>
<th>1 d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key principles. Corporate social responsibility and risk management. Key ethics and compliance areas relevant to the Oil &amp; Gas industry: bribery, competition law, money laundering, trade sanctions. FCPA compliance. Business contingency planning: black swan events, resilience.</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Testing Risk Responses, Learning from Incidents</th>
<th>0.5 d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assurance planning tools characteristics and pros and cons (KPIs monitoring, self-assessment, peer reviews, audits). Designing the assurance plan. Learning from incidents (root cause analysis, effective sharing of learnings).</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Putting it All Together: Common Structured Frameworks</th>
<th>0.5 d</th>
</tr>
</thead>
</table>

Reference: GIP/RMC  ● Only available as an In-House course.  Contact: em.contact@ifptraining.com
Governance of an E&P Company

Level: PROFICIENCY

Purpose
This course provides the most recent elements and reflections on companies governance and key issues specific to the Oil & Gas upstream companies, except for contracts audit which is treated in a separate course (upstream contracts audit).

Audience
Professionals in charge of implementing internal control and procedures, managers and independent board members wanting to know the best practices, to technical staff called to move to the internal audit of their company.

Learning Objectives
Upon completion of the course, participants will be able to:
- obtain a global understanding of the problems attached to company’s governance,
- know the most recent solutions developed and implemented in internal control of companies,
- analyze the human and financial resources needed to ensure the financial safety of the company,
- lead or supervise the creation of an internal audit.

Ways & Means
Discussions on key issues and examples from the news.

Learning Assessment
Participants will be evaluated during the training through quizzes and case studies.

Prerequisites
5 to 10 years of experience in the international Oil & Gas industry environment.

Expertise & Coordination
Contracted IFP Training trainers having expertise and experience in auditing of exploration-production activities.

Course Content

GOVERNANCE OF COMPANIES
1.5 d
Internal control: where and when.
Principles of financial security.
Definition of audit, norms and standards.
Internal control: definition, modalities.
Internal audit, external audit.
Audit committee, Certified Public Accountants (CPAs) and external auditors.

AUDIT & INTERNAL CONTROL
2 d
Definition.
Code of conduct and internal audit.
International standards of internal audit.
Internal control and the COSO referential.
Risk definition and management.
Fraud definition, types and prevention.
Introduction to internal audit methods.

OIL & GAS SPECIFIC ISSUES
0.5 d
FCPA compliance.
New reporting requirements for listed companies.
Reserves, payments to States, emission certificates.

BEST PRACTICES STUDY
1 d
Institutional answers in the USA and in the European Union.
Company’s organization.
Developing an internal culture of financial safety.

Reference: GIP/GEPIC
Can be organized as an In-House course.
Contact: em.contact@ifptraining.com

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<tbody>
<tr>
<td>Rueil</td>
<td>25 November</td>
<td>29 November</td>
<td>€3,680</td>
</tr>
</tbody>
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This course is also available in French: GIP/GCEP. Please contact us for more information.
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Evelyne BARTHELEMY has more than 25 years of international experience in refining. She was Head of Cost Department, Project Manager, Process Engineer in BEICIP-FRANLAB, SOFRESID-SAIPREM and TECHNIP.

Area of expertise: Refining Economics, Refining operations optimization, project investment evaluation

Frédéric BAULE is an Associate Professor. He is a crude oil and product market specialist.

Areas of expertise: Risk management for trading, supply, and marketing activities

J-E BLUMEREAU is an Associate Professor, doctor in law, with 30 years of international experience in a major oil company. Having held different positions in the Upstream activity, in France and abroad.

Areas of expertise: The contractual framework of Oil & Gas Exploration & Production

Pierre BOUILLON is an Associate Professor with a more than 25-year career at Elf Exploration & Production, Sanofi and Total. He has held senior positions, notably in finance and audit.

Areas of expertise: Internal audit, joint-ventures audit, and petroleum accounting

Ézékiel BOYER is an Associate Professor currently working for the department in charge of international business development at Engie (GDF Suez).

Areas of expertise: Natural gas market liberalization

Sylvie CHEMINEAU holds a Master of International Economic and Financial Risk Management. Her professional experience includes Economic Analysis and Regulation of Gas Markets at Engie (GDF Suez).

Areas of expertise: Oil & Gas geopolitics, Gas & LNG economics, and gas markets

Jean-Philippe CUEILLE is in charge of the apprenticeship program at IFP School and is the former President of the International Association of Energy Economist (IAEE).

Areas of expertise: Energy economics

Gilles DARMOIS is an Associate Professor and has held senior positions at Total, notably as vice-chairman in charge of financial activities in the Exploration & Production division.

Areas of expertise: Finance in O&G industry, accounting and audit

Bruno DE CORBIÈRE is an Associate Professor with a 20-year international experience in petroleum product marketing at Texaco.

Areas of expertise: Shipping

Mohamed Lyes DJENAOUI holds a Master of Energy Economics and is a Senior Petroleum Economist at IFP Training.

Areas of expertise: Upstream economics and investment project analysis

Bernard DUVAL is an Associate Professor since 1995 after 35 years with Total. He has held senior positions in France and abroad, notably as Vice-Chairman in charge of Exploration.

Areas of expertise: Upstream economics and risk analysis

Karim FAÏD has 25 years of experience in teaching and economic studies.

Areas of expertise: Upstream economics and investment projects analysis

Mustapha FAÏD has held many positions throughout his 35-year career, notably as Gas Export Director then Vice President of Marketing and Development at Sonatrach. He was the General Director of the Observatoire Méditerranéen de l’Energie (OME) and President of SPTEC Advisory, a consulting firm.

Areas of expertise: Commercial negotiations and gas contracts

Jean-Pierre FAVENNEC is an expert and professor from IFP School with a long experience in the economics and management of energy and especially oil.

Areas of expertise: Oil geopolitics, petroleum economics, refining economics
Marc GRANIER has a long standing experience of the petroleum industry at ExxonMobil. He was the Refining Director at the Notre Dame de Gravenchon ExxonMobil refinery in France, Executive Vice President at the Yanbu refinery and Vice President of Chemicals in Riyadh in Saudi Arabia. He has also served as Deputy General Director and International Director at IFP Training

Areas of expertise: Refining and petrochemical economics

Lucien GUEZ has more than 30 years of experience at ExxonMobil in refining, supply and international trading

Areas of expertise: Petroleum economics, supply, and oil markets

Daniel KOSKAS is an Associate Professor, currently working as a legal auditor and a certified public accountant for international companies in the Oil & Gas sector

Areas of expertise: Internal control and focused audits as well as legal audits for the certification of financial statements

Christian LA MARRE, Associate Professor, has more than 35 years in international experience at Total, as General Manager in Total E&P subsidiaries in Asia and Africa

Areas of expertise: EP contracts and procurement, Finance, Economics

Frédéric LANTZ has supervised applied research projects related to linear programming and econometrics, first for Ifremer and then for IFP School

Areas of expertise: Quantitative methods

Frida MOKRANI has a 30 years experience in Shell and VARO Energy in refining and supply

Areas of expertise: Refining economics, Optimization of refining operations, Supply chain

Patrick MONIN, Associate Professor, has a 30 years Finance experience at Shell. He has a broad operational, commercial and finance skills in upstream and downstream activities

Areas of expertise: Finance, investment projects, Value assurance management, M&A

Pierre NOAILLY, Associate Professor, has an international experience in Downstream at Total. He was Supply, Refining Operations, Strategy & Development Manager for Downstream in France, Asia and Africa

Areas of expertise: Supply, Refining Economics

Philippe ROCHOUX has spent most of his career at Total. He joined the company in 1980 and occupied various positions mainly in the Exploration & Production Division in Finance in Europe & West Africa, and has held executive positions in Kazakhstan and Iran

Areas of expertise: Finance and audit

Sylvie SAULNIER is the Director of the Economics & Management Division at IFP Training. In her 15-year career at Shell, she has held different positions in R&D, International Development and Finance & Strategy

Area of expertise: Downstream economics

Pierre TÖGNET, Associate Professor, has more an 30 years international experience at Shell and is an expert in Petroleum Economy, value creation, decision support, risk management, model building, fiscal systems

Area of expertise: Upstream economics, investment projects analysis

François VATIER, Associate Professor, has more than 30 years in Total. He has many positions as Total representative and Manager in Europe, Africa and Middle East

Area of expertise: Upstream Economics, EP contract and negotiation

Dominique VENET is an Associate Professor with a 30-year career at Total and EDF. He has held senior positions in the upstream sector and business development in gas and LNG

Areas of expertise: Business development, financial engineering, and gas contracts negotiations
Register

Identify on the course program the course reference, the price, the location and the dates you are interested in; as well as the contact name for registration.

So that your registration is done in the best conditions, please follow the procedure below:

- **3 weeks minimum** before the beginning of the course → register preferably on our website:
  https://www.ifptraining.com
  or send the fully completed registration form (downloadable on our website or available from one of our secretarial departments).

- **2 weeks minimum** before the beginning of the course → Please make the full payment
  - By check payable to IFP Training, 232 avenue Napoléon Bonaparte – 92852 RUEIL MALMAISON CEDEX
  - By bank transfer to IFP Training
    NATIXIS n° 30007 99999 04165583000 12
    IBAN: FR76 3000 7999 9904 1655 8300 012 – NATXFRPPXXX

Should a sponsoring organization (like OPCA in France) pay for the course, please specify it on the registration form.

Do not hesitate to contact us for a late registration.

*Tuition fee includes instruction, documentation as well as meals and beverage breaks.*

**IFP Training will send to the authorized person indicated on the registration form:**
- a written confirmation by mail
- one or several invitations for the participants
- useful information about the training course (access to the training center, training hours, etc.).

**Who should you send your registration form to?**

The registration form can be sent by email, mail or fax.

It should be sent to the entity organizing the course you have chosen. This entity appears at the bottom of the course program.

All enrolments are considered as accepted orders as soon as the enrolment confirmation issued by IFP Training has been received and implies the client’s full commitment to these Terms & Conditions which prevail over all other Client documents, including general purchasing conditions.
Your Contacts

Exploration & Production

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General Terms of Sale

1. Purpose and scope
The purpose of these General Conditions of Sale (hereinafter referred to as the “GTC”) is to define, both in France and internationally:
- on the one hand, the organization and implementation of in-house training sessions by IFP Training on behalf of the Client (hereinafter the “Client”), signatory of the Training Order defined below;
- on the other hand, the general conditions for participation in the Public training sessions organized by IFP Training.

2. Order provisions
Every request is placed on the basis of an IFP Training commercial proposal (serving as the special terms for the present GTC), particularly setting specific conditions for training services to be provided, the price and the payment terms (hereafter the “Training Order”).

▶ For In-house training sessions
Unless indicated otherwise, IFP Training commercial proposals are valid for a three-month (3) period from the date of dispatch of the IFP Training commercial proposal to the client.
The Training Order shall be submitted by the Client at least five (5) weeks before the starting date of the first requested session. IFP Training reserves the right to refuse late orders.
The Training Order will be binding upon IFP Training once IFP Training has received the following documents:
- the IFP Training commercial proposal initialed on each page, with the last page containing the handwritten indication “Accepted and Agreed”, as well as the Client’s signature and commercial stamp, if any;
- these GTC with initials on each page;
- contact details of the invoice’s recipient, and all information to be contained in the invoice.
As such, the Training Order is made up of the following documents, in decreasing order of priority:
1. IFP Training commercial proposal;
2. IFP Training GTC;
3. all other documents referred to in the IFP Training commercial proposal.
Client’s acceptance of the IFP Training commercial proposal constitutes its firm and definitive commitment to the Training Order and implies the non-applicability of its own general terms of purchase, even if mentioned in the Client purchase request.

▶ For Public training sessions
All inscriptions to training sessions shall be carried out three (3) weeks prior to the session start date. IFP Training reserves itself the right to accept late enrolment. The number of participants per session is limited. Enrolment will be confirmed once the organization center receives a fully complete enrolment form via email, fax or mail. Incomplete enrolment forms will not be accepted. Enrolment will be final once payment has been received in full or once an acceptance certificate from a sponsoring organization has been received.
All enrolments are considered as accepted orders as soon as the enrolment confirmation issued by IFP Training has been received and implies the client’s full commitment to these Terms & Conditions which prevail over all other Client documents, including general purchasing conditions.
If the entire cost of the session is not paid two (2) weeks before the training session begins, IFP Training reserves itself the right to reopen to registration the places booked by the Client, after having informed them. If full payment is received IFP Training will, at least two (2) weeks prior to the start of the session, send a letter to the Client designated on the form to confirm their enrolment. A personal invitation will be attached to the letter and which provides all practical information about the session (schedule, directions, etc.).

3. Invoicing and payment
3.1. Price
▶ For In-house training sessions
Invoicing and payment schedule is defined in the commercial proposal. Unless indicated otherwise in said proposal, quoted prices are in Euros and exclusive of taxes; VAT at the applicable rate and/or any possible duties and/or taxes withheld at the source according to the applicable legislation shall be added. Prices are firm and not subject to revision.

▶ For Public training sessions
Enrolment fees cover training (teaching, practical activities, simulators and other IT tools, documentation, supplies) as well as break-time related costs (refreshments). And do not cover transport and accommodation. The price on the order form is indicated in Euros, tax not included. VAT at the current rate will be added to the indicated price plus any other withholding taxes. All training sessions, once started, have to be paid in full.
Upon request, IFP Training may decide to apply reduced enrolment fees for job seekers.

3.2. Payment
Payment will be made by bank transfer to the beneficiary IFP Training: NATIXIS account No. 30007 99999 04165583000 12 IBAN: FR76 3000 7999 9904 1655 8300 012 – BIC: NATXFRPPXXX
▶ Payment by a third party organization (such as accredited collecting funds for training): if Client makes a third party pay for the training, it must so inform IFP Training at the time of the Training Order. In this case, IFP Training will make its reasonable efforts to provide the documents requested by the Client (possible translation at the Client’s expense). The Client will ensure that payment is made by that third party. In case of non-payment or partial payment by said third party for any reason whatsoever, all sums not received by IFP Training on the due date will be borne by the Client.

▶ For Public training sessions, the training session will only be accessible to the Client once that IFP Training has been paid in full. By check to the order of:
IFP Training - 232, Avenue Napoléon Bonaparte
F-92852 Rueil-Malmaison Cedex
Via bank transfer to IFP Training above mentioned account.
A duplicate is available provided that the Client requested it on the enrolment form.
If the Client wishes to pay using a sponsoring organization, the following procedures should be followed:
- before the start of the session, a request for direct billing should be issued and accepted;
- this shall be indicated explicitly on the enrolment form;
- the Client ensures the completion of payment by the designated organization.
IFP Training will provide the Client with all documents needed to make a sponsoring request.
If the sponsoring organization only bears part of the training cost, the remaining amount will be charged to the Client. Only payments by sponsoring organizations before the first day of training will ensure enrolment and access to the training.
If, for whatever reason, the sponsoring organization doesn’t pay, the Client will be charged the full training amount. At the end of the session IFP Training will send the sponsoring organization an invoice along with a copy of the certificate of attendance signed by the participant.

3.3 Late payment
Pursuant to the provisions of article L441-6 of the French Commercial code, all sums not paid on their due date will require Client to pay late payment penalties equal to three (3) times the French legal interest rate.
General Terms of Sale

These penalties are due until full payment. In the event of late payment, the Client will also owe to IFP Training a fixed compensation of forty (€40) Euros for collection costs. Should collection costs be higher than such fixed compensation, IFP Training can demand additional compensation from the Client by providing supporting proof.

IFP Training also reserves the right to interrupt the performance of the services if an invoice is not paid on or before the due date, without prejudice to any other recourse.

4. Cancellation and deferral - Modification of services

4.1 Cancellation and deferral conditions

For In-house training sessions

By the Client: Any request for cancellation or deferral of all or part of the Training Order by Client shall be notified to IFP Training in writing, with acknowledgment of receipt, no later than three (3) weeks before the session date. This three (3) week delay is counted from the date of reception by IFP Training of said request.

(i) In case of deferral:

Any deferral requested less than three (3) weeks before the session date will be considered by IFP Training as a session cancellation. The conditions of (ii) or (iii) below will then apply.

(ii) In case of partial cancellation of the Training Order (i.e. cancellation of one or more sessions):

For any Training Order or part thereof cancelled while giving the required three-weeks prior written notice, the Client will only pay the expenses already incurred by IFP Training (including internal preparation costs) that cannot be deferred.

For any session cancelled between one and three (3) weeks before the session date, the Client will have to pay 60% of the price of the cancelled session.

For any session cancelled with a notice given less than one (1) week before the session date, the Client will have to pay 100% of the cancelled session's price.

Full payment is required for every session performed, however partial.

The Training Order will remain valid for all non-cancelled sessions.

(iii) In case of the Training Order’s total cancellation:

The provisions of (i) will be applicable to the entirely cancelled Training Order and to the total price of the Training Order.

By IFP Training: IFP Training reserves the right to cancel or defer any session providing a three-(3) week prior notice, by e-mail, fax or letter. No compensation will be paid to the Client but IFP Training undertakes to agree with Client on a new session date within four (4) months.

For Public training sessions

By the Client: Cancellation by the Client shall be sent in writing to IFP Training. In the eventuality of a cancellation, even due to force majeure, less than 14 calendar days before the beginning to the session, 50% of the enrolment fee will be charged by IFP Training, except if a participant from the same company takes the participant’s place. Such a replacement must be communicated to IFP Training and confirmed by sending a new enrolment form.

In case of non-cancelled enrolments (including absenteeism or dropout), 100% of the enrolment fee will be charged by IFP Training. In case of an unforeseen departure, justified by the Client, the participant may be authorized to take part in a later session with the prior consent of IFP Training.

By IFP Training: IFP Training reserves itself the right to cancel or postpone a session, especially if there are an insufficient number of participants. The Client will be notified by telephone at least 2 weeks before the session was due to begin. The cancellation will be confirmed in writing. The payments received will be fully refunded. No compensation on behalf of IFP Training will be given to the Client due to cancellation or postponement of a session.

4.2 Modification of services

Any modification of the training services requires an amendment to the Training Order.

IFP Training must be given prior written notification of any change of the number of session participants, such changes being subject to the following conditions:

- Any downward adjustment of the number of the Client’s session participants can be considered by IFP Training as a partial cancellation of the session in question and will thereby be managed according to the rules listed in article 4.1 (i) that will be applied to the unit cost per participant indicated in the commercial proposal (or, failing that, by dividing the total Training Order amount by the number of Client’s participants).

- Any additional participant will be subject to prior approval of IFP Training and to an additional commercial proposal.

- Any request for a change of the number of participants must be submitted to IFP Training no later than one (1) week before the concerned session date.

Client can replace a participant with another, after notifying IFP Training.

5. Conditions for performance of the services

To fulfill the Training Order, IFP Training will perform the services proposed at the commercial proposal accepted by Client through qualified trainers.

Performance site:

The site where the training services will be performed is indicated in the Training Order. Should the training be provided outside of an IFP Training site, the Client will ensure the access of IFP Training and its trainers to the premises where the sessions will be held, and will provide them with all material and equipment (i.e. computer, projector, screen…) needed for the performance of the services on the site in accordance with IFP Training specifications.

Client’s information required for the performance of the services:

Client will provide IFP Training with the information and data specified in IFP Training commercial proposal, as well as all information needed to facilitate the services’ performance.

In case of late delivery of said needed information, IFP Training may decide to defer the concerned sessions and shall so inform the Client. In this case, IFP Training and the Client will jointly agree on new dates for these sessions.

All data and information provided by the Client will be kept confidential by IFP Training. At the Client’s written request, such data and information can be returned to the latter at the end of the Training Order.

The Client bears sole responsibility for the data and information that it provides to IFP Training for the performance of services. The data and information provided by the Client remain its property.
General Terms of Sale

6. Information technology and freedoms
Information of a personal nature provided by the Client to IFP Training for the performance of the session may be communicated to the contractual partners of IFP Training and to the trainers for the purposes of the services. Pursuant to the provisions of French law No. 78-17 of January 6th 1978, the persons in question can at any time exercise their rights to access, oppose and rectify said information within the IFP Training files.

7. Property rights to the pedagogical documents
Parties shall be bound by an obligation of confidentiality with regard to all documents and information specified as confidential during the training session, whatever their format. The Parties undertake to ensure compliance with this obligation by all their personnel and, more generally, by any person put in contact with the other Party by one Party during the training session.

All educational documents and information transmitted by a Party within the framework of the training sessions belong to the said Party and/or its contractual partners and/or trainers and their use, disclosure or copy is prohibited unless prior written agreement has been obtained from the disclosing Party.

Under no circumstances may these GTS be interpreted as conferring, expressly or implicitly, on the recipient Party the grant by the disclosing Party of a license right, or a promise to grant a license right, for any direct or indirect reproduction, adaptation, modification, representation or dissemination by the recipient Party, in any form whatsoever, of all or part of the documents (in particular educational documents produced by IFP Training) transmitted by the disclosing Party and/or the information contained, to its non-participants at the session or to third parties; any use for the purpose of marketing, organizing or carrying out training activities (including internal training) is expressly prohibited.

The Recipient Party is responsible for any unauthorized use, copying or distribution of information or documents (in particular educational documents produced by IFP Training) transmitted by the disclosing Party and/or the information contained, to its non-participants at the session or to third parties; any use for the purpose of marketing, organizing or carrying out training activities (including internal training) is expressly prohibited.

The Client agrees not to remove any proprietary notices present on educational documents sent by IFP Training as part of the services.

8. Advertising
Any use by Client of the “IFP Training” name for promotional or advertising purposes must have received the prior written approval of IFP Training. IFP Training reserves the right to mention the Client as being one of the IFP Training Clients for advertising purposes, on any support and medium.

9. Undeclared labor - Subcontracting
IFP Training fully complies with French labor, fiscal and social laws pertaining to its trainers.

IFP Training may subcontract the performance of part of the training services to qualified partners, who shall also comply with French labor, fiscal and social laws pertaining to their trainers. In no way does subcontracting release IFP Training from its obligations and liabilities pursuant to the present General Terms of Sale.

10. Force majeure
For the purposes of this GTC, the term force majeure (hereinafter referred to as "Force Majeure") shall have the definition provided for in Article 1218 paragraph 1 of the Civil Code.

The Parties agree to consider as a Force Majeure event notably extreme weather conditions, lightning or fire, any requirement demanded for the protection of public safety, strikes, social movements from the personnel of the prevented Party or from the personnel of its subcontractor(s).

The Party that is prevented from executing its obligations under the present Training Order because of the occurrence of a Force Majeure event shall inform the other Party(ies), as quickly as possible by any means, confirmed in writing by the dispatching of registered letter with an acknowledgement of receipt, within a five (5) working days period following the occurrence of said event, indicating the nature of its circumstances and, as far as possible, its estimated duration and the extent of the impediment.

This Force Majeure event shall result in the suspension for the prevented Party and/or any other Party which is directly impacted by said event of its obligations under the Training Order. Therefore, no Party shall be held liable for the delay in the execution, or for the inexecution of all or part of its obligations under the Training Order is this delay or this inexecution is due to the occurrence of a Force Majeure event.

The Party having invoked the Force Majeure event shall:
- make its best efforts in order to limit and/or mitigate as much as possible its consequences in order to timely resume the execution of the Training Order;
- continue the execution of the contractual obligations that are not affected by the Force Majeure event;
- inform the other Party(ies) in writing of its termination.

The suspended obligations shall be executed again as soon as the Force Majeure event has ceased. The contractual deadlines shall be extended by the duration of said event. Should the effects of the Force Majeure event continue beyond a thirty (30) working days period from its occurrence, the Parties shall seek to reach agreement in order to decide on the further course of action for the execution of the Training Order.

In case of a Force Majeure occurrence lasting more than thirty (30) consecutive days, the Party faced with such Force Majeure occurrence can immediately terminate, by the dispatching of registered letter with an acknowledgement of receipt, the Training Order, without compensation to the other Party.

11. Termination
The Training Order may be terminated by either of the Parties in the event of non-performance by the other Party of one or more of its obligations in accordance with the Training Order. Termination shall only become effective one (1) months after the dispatching by the Party claiming non-performance of a registered letter with acknowledgement of receipt unless the breaching Party has cured its non-performance.

12. Liability - Insurance
Except in case of willful misconduct, IFP Training and the Client will respectively deal with the consequences of accidents that may occur during the performance of the Training Order and involving their own personnel, including the session participants that they directly or indirectly employ as well as their property or any property in their custody, irrespective of the author of the damages.

Accordingly, each party waives any recourse against the other for any damages caused to persons and property, except in case of willful misconduct.

Each Party shall be solely liable for any loss, damage or injury to third parties resulting from the performance of the said Party’s obligations by it or on its behalf under the Training Order.

Moreover, under no circumstances can IFP Training be held liable for any financial, commercial or other damage directly or indirectly caused by the use of any information provided by IFP Training within the framework of the training sessions.
In all other cases, Client acknowledges that the liability of IFP Training is strictly limited, for direct damages, to the price of the Training Order and excludes any indirect damages.

In view of the above provisions, IFP Training and the Client shall ensure that their respective insurers waive any subrogation rights against the Parties. Should IFP Training or Client fail to ensure this waiver, the defaulting party will bear the financial consequences.

Client undertakes to obtain and maintain, for the duration of the session and at its own expenses, the validity of all insurance policies needed in order to cover the risks, liabilities, direct or indirect damages and illnesses that could be suffered by the participant(s), its personnel or its property, obtained from duly solvent insurance companies.

At its expenses, IFP Training undertakes to subscribe and maintain the validity of the insurance needed for the coverage of its liabilities under the Training Order.

13. Personal data
As the person responsible for processing its personnel file, the Customer undertakes to inform each employee (hereinafter referred to as the User) that:
- personal data concerning him/her are collected and processed by IFP Training for the purposes of conducting and monitoring training and promoting and promotion;
- the connection, the training path and the follow-up of the Users’ knowledge are data accessible to its services and in particular to the staff;
- in accordance with the provisions of the French Data Protection Act of 6 January 1978 in its version in force at the time of the Order, as well as the provisions of the General Data Protection Regulation (EU Regulation 2016/679 of the European Parliament and of the Council of 27 April 2016 applicable as from 25 May 2018), the User has a right to access, modify, rectify and delete his personal data (hereinafter “Rights”) concerning him and that for this purpose, an online request specifying the identity and e-mail address of the applicant can be addressed to IFP Training.

The Rights provided for in the preceding paragraph may be exercised by contacting customer service at the following email address: rgpd@ifptraining.com or by writing to IFP Training Service Marketing 232 avenue Napoléon Bonaparte, 92852 Rueil-Malmaison Cedex – France.

For all matters relating to the Order, the Parties state and guarantee that they do not and will not give or offer to give, directly or indirectly, any sum of money or any other pecuniary or non-pecuniary benefit to anyone for the purpose of obtaining the Order or facilitating its execution.

14. Miscellaneous provisions - Litigation
14.1 The fact that a Party does not invoke the benefit of a clause of the Order does not entail a waiver by it of the benefit of that clause.
If one or more of the provisions hereof were to prove null and void under an applicable law or decree or a final judicial decision, it (they) would then be deemed unwritten. However, the other provisions would remain in full force and effect.

A notification by registered letter with acknowledgement of receipt shall be deemed to have been sent on the date appearing on the stamp affixed by the postal services.

Upon completion of the training session and/or in the event of early termination of the Order for any reason whatsoever, the provisions of Articles 6, 7, 8, 12 and 13 shall remain in effect.

The present General Terms of Sale are subject to French law. Any dispute, not resolved amicably between the Parties within one (1) month, and relating to the validity, performance or interpretation of these General Terms of Sale shall be subject to the jurisdiction of the Commercial Court of Nanterre, including in cases of multiple defendants.

14.2 Fight against corruption
IFP Training and the Client undertake to fight against corruption in all its forms, public or private, active or passive both vis-à-vis their suppliers or subcontractors and vis-à-vis their principals.

In this respect, the Client undertakes to comply with French anti-corruption legislation, similar legislation applicable at the place of execution of the Order when all or part of the Order is carried out outside France, as well as IFP Training’s charter of good conduct, which can be accessed on its website at the following address: www.ifptraining.com

For all matters relating to the Order, the Parties state and guarantee that they do not and will not give or offer to give, directly or indirectly, any sum of money or any other pecuniary or non-pecuniary benefit to anyone for the purpose of obtaining the Order or facilitating its execution.

The Parties undertake to keep all accounting documents and other evidence of payments made or received and expenses incurred by them in connection with the Order during its term and at least three (3) years from the date of expiry or termination of the Order. Each Party or a third party appointed by it shall have the opportunity to audit such documents, subject to reasonable notice to ensure compliance by the other Party with the provisions of this clause.

In case of violation of this clause by one of the Parties, the other Party reserves the right to suspend, for a period not exceeding three (3) months; and/or terminate the Order automatically, without any formality, and at the sole discretion of the said Party.