



COURSE OVERVIEW TM0571 Petroleum Economics

Course Title

Petroleum Economics

Course Date/Venue

Session 1: June 29- July 03, 2025/Meeting Plus 8, City Centre Rotana Doha Hotel, Doha, Qatar

Session 2: December 07-11, 2025/Meeting Plus 8, City Centre Rotana Doha Hotel, Doha, Qatar



Course Reference

TM0571



Course Duration/Credits

Five days/3.0 CEUs/30 PDHs

Course Description



This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using our state-of-the-art simulators.

Basics of petroleum economics and project selection. The time value of money, cash flow basics, net present value, common economics indicators, fiscal systems and project selection fundamentals. Introduction to basic risk analysis. Fiscal regimes around the world.



Economics drives the entire oil and gas industry. Almost every decision is made on the basis of an economic evaluation. Economic evaluations are also performed to determine reserves and the "standardized measure of value" for reporting purposes for publicly held companies. In many cases, the goal of the company is to make decisions that have the best chance of maximizing the present day profit.



Petroleum economics has a vital role to play in the Oil & Gas industry and it lies at the heart of all decision making. Various techniques have evolved over time in determining and calculating economic inputs, evaluating investments, quantifying risk and generating feasible portfolios. Petroleum economics brings together information and expertise across the E&P spectrum and a clear understanding of concepts such as cash flow analysis, organizational challenges, price forecasting, cost drivers and risk management is required.



Petroleum economics course covers essential foundation of petroleum economics, project economic evolution, and basic decision and risk analysis. It covers other key concepts like time value of money, cash flow basic, common economic indicators, fiscal systems, and project selection fundamentals.

This course is designed to provide participants with a detailed and an up-to-date overview of petroleum economics. It covers the concepts of uncertainty and risk and O&G best practices to aide the economic evaluations of new business projects; the project economics; the cashflow and economic indicators and profitability; the fiscal regimes; the economic assessment and decision making of international contracts; the project risk and uncertainty; and the project investment analysis that include incremental analysis, capital budgeting and project selection process, financing, contracting and ownership, multiple project analysis and decision making.

Course Objectives

Upon the successful completion of this course, each participant will be able to:-

- Apply and gain a good working knowledge on petroleum economics
- Orient employees to concepts of uncertainty and risk and O&G best practices to aide the economic evaluations of new business projects
- Discuss Cash Flow covering methods of evaluation, project lifecycle, stage-gate process, methods of forecasting production, prices and operating expenses, capital expenditure plans, capital and operating expenses etc.
- Identify cashflow and economic indicators and profitability
- Recognize fiscal regimes comprising of various concessionary systems, production-sharing contracts, service agreements and international trends in various fiscal systems
- Carryout economic assessment and decision making of international contracts and how to evaluate the economic viability of a project
- Identify project risk and uncertainty analysis and models to weigh risk and uncertainty covering sensitivity analysis, incorporating risk, models to weigh risk and uncertainty
- Employ project investment analysis that include incremental analysis, how to use economic criteria to choose investment, capital budgeting and project selection process, financing, contracting and ownership, multiple project analysis and decision making

Exclusive Smart Training Kit - H-STK®



*Participants of this course will receive the exclusive “Haward Smart Training Kit” (H-STK®). The H-STK® consists of a comprehensive set of technical content which includes **electronic version** of the course materials conveniently saved in a **Tablet PC**.*

Who Should Attend

This course provides a wide understanding and deeper appreciation of petroleum economics for reservoir engineers and to those involved in oil & gas operational planning, exploration and production. This includes engineers and financial staff.




Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.

Certificate Accreditations


Certificates are accredited by the following international accreditation organizations:-

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The International Accreditors for Continuing Education and Training (IACET - USA)

Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

Haward Technology’s courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units (CEUs)** in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant’s involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant’s CEU and PDH Transcript of Records upon request.

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British Accreditation Council (BAC)

Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.





Course Instructor

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor prior to the course date and inform participants accordingly:



Mr. Konstantin Zorbalas, MSc, BSc, is a Senior Petroleum Engineer & Well Completions Specialist with over 25 years of offshore and onshore experience in the Oil & Gas, Refinery & Petrochemical industries. His wide expertise includes Workovers & Completions, Petroleum Risk & Decision Analysis, Acidizing Application in Sandstone & Carbonate, Well Testing Analysis, Stimulation Operations, Reserves Evaluation, Reservoir Fluid Properties, Reservoir Engineering & Simulation Studies, Reservoir Monitoring, Artificial Lift Design, Gas Operations, Workover/Remedial Operations & Heavy Oil Technology, Applied Water Technology, Oil & Gas Production, X-mas Tree & Wellhead Operations & Testing, Artificial Lift Systems (Gas Lift, ESP, and Rod Pumping), Well Cementing, Production Optimization, Well Completion Design, Sand Control, PLT Correlation, Slickline Operations, Acid Stimulation, Well testing, Production Logging, Project Evaluation & Economic Analysis. Further, he is actively involved in **Project Management** with special emphasis in production technology and field optimization, performing conceptual studies, economic analysis with risk assessment and field development planning. He is currently the **Senior Petroleum Engineer & Consultant of National Oil Company** wherein he is involved in the mega-mature fields in the Arabian Gulf, predominantly carbonate reservoirs; designing the acid stimulation treatments with post-drilling rigless operations; utilizing CT with tractors and DTS systems; and he is responsible for gas production and preparing for reservoir engineering and simulation studies, well testing activities, field and reservoir monitoring, production logging and optimization and well completion design.

During his career life, Mr. Zorbalas worked as a **Senior Production Engineer, Well Completion Specialist, Production Manager, Project Manager, Technical Manager, Technical Supervisor & Contracts Manager, Production Engineer, Production Supervisor, Production Technologist, Technical Specialist, Business Development Analyst, Field Production Engineer and Field Engineer.** He worked for many **world-class oil/gas companies** such as **ZADCO, ADMA-OPCO, Oilfield International Ltd, Burlington Resources** (later acquired by **Conoco Phillips**), **MOBIL E&P, Saudi Aramco, Pluspetrol E&P SA, Wintershall, Taylor Energy, Schlumberger, Rowan Drilling and Yukos EP** where he was in-charge of the **design and technical analysis** of a gas plant with capacity **1.8 billion m³/yr gas**. His achievements include **boosting oil production 17.2% per year** since 1999 using **ESP and Gas Lift systems**.

Mr. Zorbalas has **Master and Bachelor degrees in Petroleum Engineering** from the **Mississippi State University, USA**. Further, he is an **SPE Certified Petroleum Engineer, Certified Instructor/Trainer, a Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management (ILM)**, an active member of the **Society of Petroleum Engineers (SPE)** and has numerous scientific and technical publications and delivered innumerable training courses, seminars and workshops worldwide.



Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures
- 20% Practical Workshops & Work Presentations
- 30% Hands-on Practical Exercises & Case Studies
- 20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

Course Fee

US\$ 6,000 per Delegate This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1

0800 – 0830	Registration & Coffee
0830 – 0845	Welcome & Introduction
0845 – 0900	PRE-TEST
0900 – 0915	Introduction to Project Economics Methods of Evaluation • Project Lifecycle • Stage-gate Process • Methods of Forecasting Production • Prices and Operating Expenses • Capital Expenditure Plans • Capital & Operating Expenses • Concepts like Inflation, Risks, Interests (Nominal & Effective Rates), Equivalence, Future Value of Present Sum, Present Value of Future Sum, Future Value & Present Value of Ordinary Annuity and Annuity Due, etc. • Project Financing • Payments and Types (including – Constant Periodic Payments, Constant Principal Payments, Interest Only Payments, Interest During Construction etc.) • Application on Excel to Practice the Concepts
0915 – 0935	Break
0935 – 1045	Cash Flow and Economic Indicators Concepts of Revenue and Operating Expenses • Capital Expenditures • Discounting Concepts & Present Value, Economic Indicators with their Usage (including DPI, IRR, Hurdle Rate, WACC etc.) • Basic Data Requirement for Forecasting Product Stream, Dependence of Capital Expenditure (CAPEX), CAPEX during Production, Breakdown of Operating Expenditure (OPEX)
1045 - 1140	Cash Flow and Economic Indicators (cont'd) Cash Flow Techniques Applicable in Economics Evaluation • Cost Estimation – Types of Costs, Estimation Tools and Techniques, Project Cost Management (Dependence & Criticality of Cost Estimates) • Economies of Scale • ATAX Cash Flow Additional Variables
1140 - 1225	Break



1225 – 1350	Cash Flow and Economic Indicators (cont'd) Depreciation Methods (Straight Line Depreciation, Declining Balance with Switch to Straight Line, Sum –of–the–Years Digit Depreciation, Units of Production Depreciation etc.) • Cost of Equity and Cost of Debt & Weighted Average Cost of Capital • Practice and Apply WACC Calculations
1350 – 1400	Recap
1400	End of Day One

Day 2

0800 – 0915	Profitability Typical Profitability Indicators – Cumulative Net Cash–Flow (Discounted & Undiscounted), Discounted Payback Period, Internal Rate of Return (IRR), Net Present Value (NPV), Profitability Index (PI), Long–Run Marginal Cost (LRMC), Maximum Sustainable Risk Netback Value and Indexed Pricing Netback Value (NBV), Base Year and ROR Approach, LRMC Approach, Indexed Netback Pricing etc.) • Funds Flow and Discounting Frequency
0915 - 0935	Break
0935 – 1045	Profitability (cont'd) NPV Dependence on CF Assumptions • International Petroleum Agreements (Joint Venture, Risk Service) with Special Reference to Fiscal System Comparison, Sliding Scale Trenches and Concessionary System's Cash–Flow
1045 - 1140	Fiscal Regimes Various Concessionary Systems • Production-Sharing Contracts
1140 - 1225	Break
1225 – 1350	Fiscal Regimes (cont'd) Service Agreements • International Trends in Various Fiscal Systems
1350 – 1400	Recap
1400	End of Day Two

Day 3

0800 – 0915	Economic Assessment (of International Contracts) & Decision Making How to Evaluate the Economics Viability of a Project • Crafting Fiscal Terms • Front- End Loading Index • Investment Selection Decision–Making (Screening, Mutually Exclusive Investment Alternatives, Non-Mutually Exclusive Investment Alternatives Using Various Profitability Concepts)
0915 - 0935	Break
0935 – 1045	Economic Assessment (of International Contracts) & Decision Making (cont'd) Ranking Project–Non–Mutually Exclusive Investments • Probability Concepts (Discrete, Binomial, Multinomial, Lognormal, Triangular Distribution)
1045 - 1140	Economic Assessment (of International Contracts) & Decision Making (cont'd) Service Producing Investments • Lease Versus Buy Decisions (With Special Reference to Uncertainty in Capital Investments and Using Techniques Like Sensitivity Analysis, Tornado Chart, Spider Diagram)
1140 - 1225	Break



1225 – 1350	Economic Assessment (of International Contracts) & Decision Making (cont'd) Expected Value Concepts–EMV, Probability Tables, Decision Trees • Simulation \ Spreadsheet Applications to Practice Various Scenarios
1350 – 1400	Recap
1400	End of Day Three

Day 4

0800 – 0915	Project Risk & Uncertainty Analysis & Models to Weigh Risk & Uncertainty Sensitivity Analysis
0915 - 0935	Break
0935 – 1045	Project Risk & Uncertainty (cont'd) Incorporating Risk
1045 - 1140	Project Risk & Uncertainty (cont'd) Models to Weigh Risk & Uncertainty
1140 - 1225	Break
1225 – 1350	Project Risk & Uncertainty (cont'd) Calculating EMV & ENPV, etc.
1350 – 1400	Recap
1400	End of Day Four

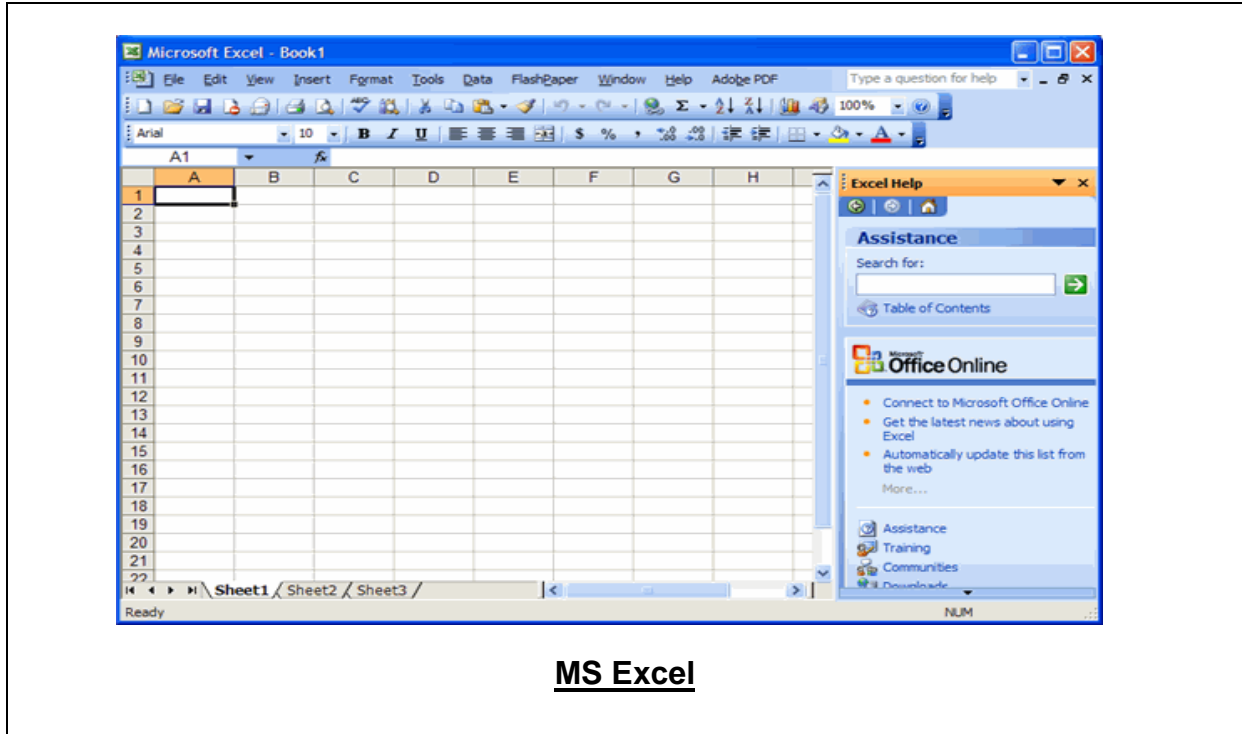
Day 5

0800 – 0915	Project Investment Analysis Incremental Analysis • How to Use Economic Criteria to Choose Investments
0915 - 0935	Break
0935 – 1045	Project Investment Analysis (cont'd) Capital Budgeting & Project Selection Process • Financing
1045 - 1140	Project Investment Analysis (cont'd) Contracting and Ownership • Multiple Project Analysis
1140 - 1225	Break
1225 - 1330	Project Investment Analysis (cont'd) Decision Making
1330 – 1345	Course Conclusion
1345 – 1400	POST-TEST
1400	End of Course

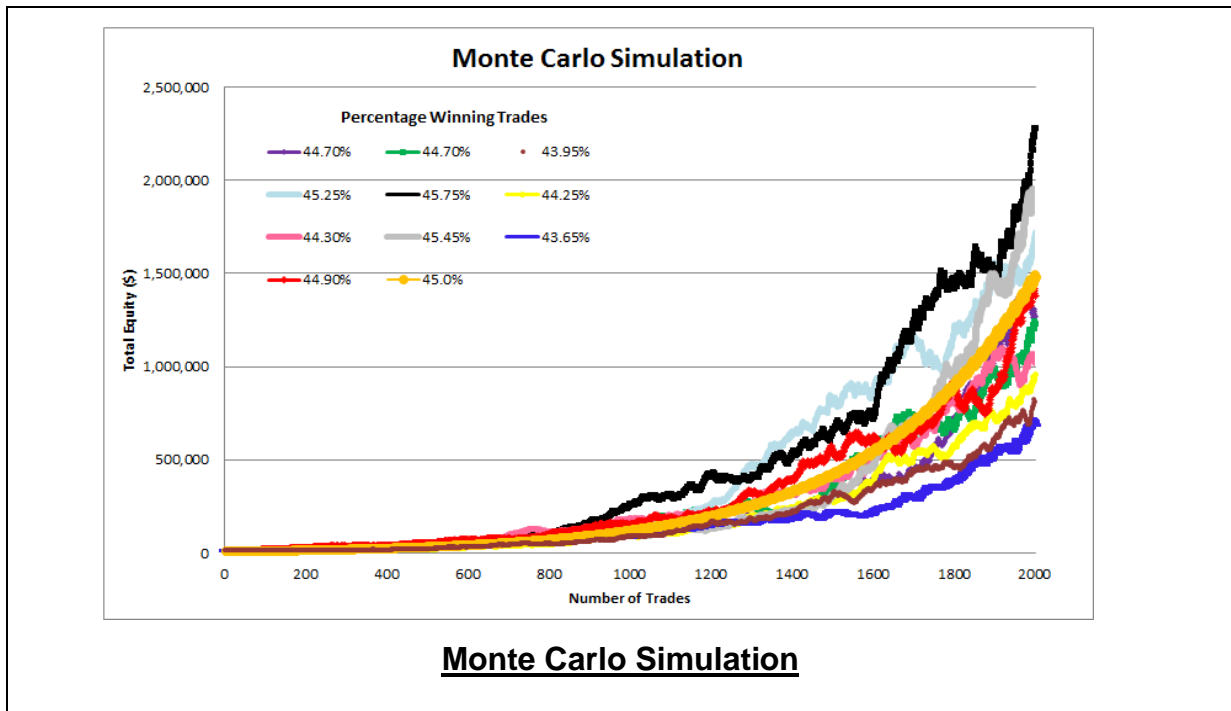


Simulator (Hands-on Practical Sessions)

Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using “MS Excel” and “Monte Carlo Simulation”.



MS Excel



Monte Carlo Simulation

Course Coordinator

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