



## Society of Petroleum Engineers

### VIRTUAL SHORT COURSE ON UPSTREAM PETROLEUM ECONOMICS

#### Title

*PETROLEUM FISCAL REGIMES AND IMPACTS ON E&P INVESTMENT & SYSTEM METRICS*

#### Duration

*Three Days  
(3 Hours per Day)*

#### Disciplines Targeted

- Economics and Management
- Production and Operations
- Reservoir Engineering
- Facility Engineering

#### Short Course Description

This course presents an overview of petroleum fiscal arrangements and general elements of fiscal regimes. We review the economic rent extraction mechanism, keeping in perspective the mutuality of interests of stakeholders -- government, investors and society. The aim is to enhance requisite knowledge for the understanding of the mechanics of estimating and evaluating the effects of fiscal terms and instruments on upstream project economics and systems metrics within the context of global competitiveness. Further a stochastic spreadsheet modeling framework is applied to quantify the associated risk and uncertainty in upstream oil and gas investment case studies in Nigeria.

#### Learning Objectives (Why You Should Attend?)

- **UNDERSTAND, EVALUATE, AND COMPARE** fiscal and production sharing contract terms in Nigeria petroleum fiscal regimes with selected but competitive petroleum provinces
- **ESTIMATE** and **APPLY** economic and system metrics to assess oil & gas industry projects under various kinds of fiscal instruments and contract terms using discounted cash flow modelling framework.
- **QUANTIFY** and **MANAGE** uncertainty and risk in upstream business decisions using a stochastic spreadsheet modelling tool and Monte Carlo Simulation process

#### Who Should Attend (Target Audience)

The course is designed for upstream E&P professionals with a need for detailed understanding of the upstream petroleum economics:

- Geoscientists
- Petroleum Engineers
- Planning and Development Analysts/Managers
- Commercial Analysts/Managers
- Business Planners/Analysts/Executives/Managers
- Production Sharing Managers
- Project Executives/Manager
- Finance and Account Executive/Manager



## Webinar Course Content

- INTERNATIONAL PETROLEUM ARRANGEMENTS – AN OVERVIEW
  - Overview of concessionary and contractual systems
  - Features and elements of Nigeria fiscal regimes & reform bills
  - Arithmetic and mechanics of estimating system metrics.
  - Designing fiscal regimes — outlook and expectations

### **Day 2 (3 HRS)**

- CASH FLOW MODELING OF UPSTREAM PROJECT INVESTMENT
  - Reserves, production economics and revenue forecasting
  - Cash flow classification—BIT or AIT; Real or Nominal
  - Time value of money and present value analytics
  - investment performance indicators—NPV; IRR; GRR; PO; AROI
  - Screening and selection of upstream projects -- MEI & NMEI

### **Day 3 (3 HRS)**

- UPSTREAM ECONOMICS UNDER RISK & UNCERTAINTY
  - Language of risk and uncertainty—mean, mode, median
  - P-values, expectation curves and stochastic inputs
  - Spreadsheet modeling tools for stochastic analysis
  - Stochastic model specifications and simulation
  - Output graphs, statistics & interpretation of results



## Instructor Bio



**Professor Wumi Iledare (PWI)** has over 35 years of technical, professional and academic experience in the global oil and gas industry. Currently serves as Ghana National Petroleum Corporation Chair in Oil and Gas Studies at the University of Cape Coast's Oil and Gas Institute, Ghana. An Emeritus Professor of Petroleum Economics at Louisiana State University, Energy Studies, USA and Director, SPE Africa Region, 2019-Present, PWI is Chirota and Emmanuel Egbogah Distinguished Professor and former Director of Emerald Energy Institute, University of Port Harcourt, Nigeria (2013-2019). An expert in international petroleum and fiscal systems economics and geopolitics and economics of oil and gas resources

and supply, Iledare, who holds a B.Sc. degree in Petroleum Engineering with honors from the University of Ibadan, Nigeria (1979); an M.S. in Energy Resources from University of Pittsburgh School of Engineering (1985); and a Ph.D. in Mineral Economics from West Virginia University (1990), served on the Nigeria National Assembly Technical Advisory Team on Petroleum Industry Reforms Bills (2016-2019). He is a distinguished fellow and the immediate Past President of Nigeria Association for Energy Economics (NAEE, 2015-2019); a Senior Fellow and the 2008 President of United States association for Energy Economics (USAEE); and the 2014 President of the International Association for Energy Economics (IAEE). Iledare previously worked as petroleum/reservoir engineer for Shell Petroleum Development Company (SPDC) in Nigeria (1980-1983), and a reservoir/production engineer trainee with Mobil Producing Nigeria (1979-1980). He publishes, severally, on upstream oil and gas economics and policy in SPE OnePetro. He ranks among the top 500 SCOPUS authors in Nigeria, 2014-2019.