



PETROLEUM ECONOMICS AND MANAGEMENT

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INTENDED AUDIENCE : Anyone interested to understand the issues related to the world oil market.

INDUSTRY SUPPORT : Oil and Petroleum Companies (ONGC, IOC), Mining, Metallurgy, Naval, Geology and Geophysics, Analytics, Consulting

COURSE OUTLINE :

The proposed course will begin with the basic issues on microeconomics, market structure (price and non-price competition), public policy, issues of sustainability. It will then discuss the evolution of petroleum industry; geopolitics and world petroleum market; the role of OPEC. Fundamentals of petroleum business – strategic issues; dynamics of petroleum pricing; the risk, uncertainty, and decision analysis will be dealt with in depth. Implications of fiscal and trade policies will also be covered.

ABOUT INSTRUCTOR :

Prof. Anwasha Aditya is Assistant Professor in the Department of Humanities & Social Sciences of IIT Kharagpur since 2013. She did her PhD from the Department of Economics of Jadavpur University, Kolkata. She received the EXIM Bank's International Economic Research Annual Award for the best PhD dissertation in International Economics in 2013. Her research interest lies in International Economics, Global Value Chain, Development Economics. Her teaching areas include International Trade, Microeconomics, Labour Economics, Statistics for Economics. She has taught the course Economics for the BTech students of Chemical Engineering and Petroleum Engineering at the Indian Institute of Petroleum and Energy (IIPE) Vishakhapatnam for 3 years. She has conducted various sponsored Projects and Consultancies funded by reputed international and national agencies like the UNDP (India and Nepal), the Commonwealth (UK), Cisco Research Foundation (USA), ICSSR. She has published in reputed international and national journals.

COURSE PLAN :

Week 1: Introduction: Relevance, course objective; Use of Oil: advantage of oil as carrier of energy; Issue of Sustainability

Week 2: Basics of Microeconomics, Analysis of Demand, Supply, Concept of elasticity, Equilibrium

Week 3: Government Intervention (Tax, Quota), Black market, Welfare Analysis: Consumer and producer surplus, Petroleum Rents

Week 4: Evolution of petroleum prices: Observations and Implications, Major pricing events, impact of Covid and lockdown measures

Week 5: Behaviour of OPEC: Whether it can explain oil's price? Is OPEC a cartel? Role of Saudi Arabia

Week 6: Petroleum as a depleting resource; Can depletion and rising costs explain price development? Cost performance of global oil industry

Week 7: Petroleum discoveries and structural changes: Resource Curse; Dutch Disease and capacity destruction;

Week 8: Fundamentals of petroleum business – strategic issues (price and non-price competition), OPEC as price leader, Application of Game Theory: Prisoner's Dilemma

Week 9: Price leadership dominant firm model, conditions of success of cartel

Week 10: Theories of price formation of Petroleum: Intertemporally Optimal Prices; Market Structure- competitive versus monopoly

Week 11: The management of petroleum wealth: Uncertainty and optimum rate of extraction

Week 12: Implications of fiscal and trade policies (with special attention to exchange rate policies, BOP crisis and Indian economy)