

Petroleum Field Resource Management

- 1.1 Course Number: PE443
- 1.2 Contact Hours: 2-0-0 Credits: 6
- 1.3 Semester-offered: 4th Year-Even
- 1.4 Prerequisite: Petroleum Geology / Formation Evaluation / Reservoir Engineering / Production Engineering
- 1.5 Syllabus Committee Member: Dr. Satish Kumar Sinha

2. Objective:

This course is designed to evaluate the economic viability of a project using cash flow techniques. Various economic criteria in selecting an investment will be taught. Students will learn various mathematical techniques to include risk and uncertainty in any petroleum project. Student will learn about the policies of the Govt. of India. Some numerical problems will be solved using software.

3. Course Content:

Unit-wise distribution of content and number of lectures

Unit	Topics	Sub-topic	Lectures
1	Petroleum Project Economics	Field life cycle, Cash flow, Economic indicators, Project Screening and ranking, Exploration Economics	6
2	Production Forecasting	Methods to acquire information about the subsurface-geological, geophysical, petrophysical, engineering, Role of technology	4
3	Reserve estimate and classification	Deterministic and Probabilistic methods, SPE PRMS Guidelines	4
4	Risk and Uncertainty	Types of risk, Mathematical techniques, Ranking Criteria and Decision Trees, Sensitivity Analysis	6
5	Petroleum Agreements and Bidding	International Petroleum Economics, Types of contracts, Effects of various fiscal terms, Indian regulatory bodies, and its functionalities.	5
6	Energy Geopolitics	World energy demand and supply, Factors affecting oil and gas prices, international co-operation in oil and gas	5
		Total	30

4. Readings

4.1 Textbook:

- John R. Fanchi, 2010, Integrated Reservoir Asset Management: Principles and Best Practices, Gulf Publishing

4.2 Reference books:

- Journals from the American Association of Petroleum Geologists
- Journals from the Society of Exploration Geophysicists
- Journals from the Society of Petroleum Engineers

5 Outcome of the Course:

- Understanding of E&P life cycle
- Evaluation of oil and gas resources
- Understanding of Government of India regulatory bodies and their functionalities
- Understanding of energy geopolitics