Energy & Geoscience Institute
AT THE UNIVERSITY OF UTAH

TRAINING COURSES

Instructor(s):

Rasoul Sorkhabi, Ph.D.
Research Professor

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Course Structure
Lectures, Study Guide, Discussions, and Quizzes

Participants:
10–15

Duration:
1 Day (or two half days)

PDH:
8 hours

Location:
Online (virtual interactive class) is available and can also be taken in 2 morning sessions of 4 hours.

**Non-EGI Members, please contact us for tuition details.*

EMAIL:
ContactEGI@egi.utah.edu

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Evolution of the Petroleum Industry: Progress, Problems and Prospects

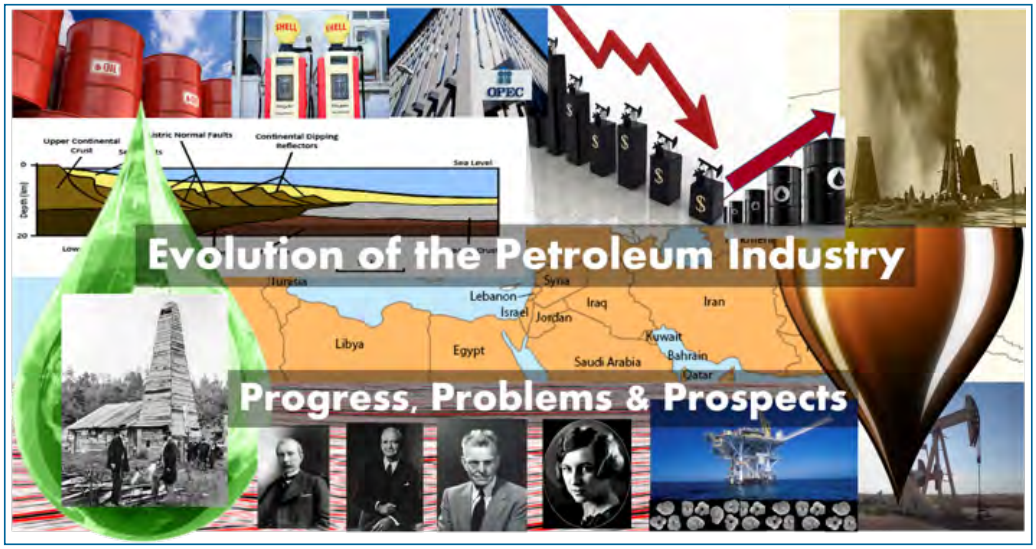
Available to EGI Corporate Associate Members

OVERVIEW

There is a whole history of the world in a droplet of oil.

All that we use is the product of history. As such there is no escape from history. Indeed, an evolutionary perspective deepens our field knowledge and enriches our work experiences. This is especially true for the petroleum industry, which has increasingly shaped the modern world in the past 150 years or so. Petroleum is intertwined with geopolitics, world economy, modern civilization, and the environment. The petroleum industry in its evolutionary course has made great strides; it has also witnessed ups and downs, and like any other industry, it has a history of pros and cons.

This short course attempts to decode the complex history of the petroleum industry; it offers discussions on various dimensions of the petroleum industry from a historical and evolutionary perspective. We will review the birth and growth of the petroleum industry, its interactions with the political and economic history of the modern world, its contributions to science, technology and life standards, and its challenges, problems and prospects.



Objectives and Learning Outcomes

The course aims to provide a working knowledge of the following:

- How the modern petroleum industry grew and shaped the world
- The role of petroleum in geopolitics, world economy, and the modern civilization
- Connections between the petroleum industry and science and technology
- How petroleum companies have evolved geographically and structurally
- Petroleum and energy transition

Upon successful completion of the course, a Certificate indicating Professional Development Hours (PDH) will be issued by the University of Utah's Energy & Geoscience Institute.

Course Outline

Section 1. The Nature of the Petroleum Industry

Section 2. Petroleum in Pre-modern Times: World's Petroleum Classics

Section 3. The Birth and Growth of the Modern Oil Industry

Section 4. Oil Geopolitics and Wars

Section 5. Petroleum Organizations: OPEC, IEA, etc.

Section 6. Oil Prices and Crises: Oil Scares, Oil Booms, Oil Busts, and World Markets

Section 7. The Growth of Petroleum Geology, Geophysics, and Geochemistry

Section 8. Drilling and Distribution Technologies

Section 9. Petroleum Companies: History, Geography, and Business

Section 10. Petroleum Industry and Energy Transition

Target Audience

Evolution of the Petroleum Industry is useful for petroleum geoscientists, engineers, economists, and managers who want to gain a historical perspective on the petroleum industry, science, geopolitics and economy. This historical knowledge-base is especially relevant for the current discourses on energy transition.

Personal Message from the Instructor

Thank you for your interest in this course. This course has been designed based on many years of teaching the history of oil at the University of Utah's Middle East Center and International Studies as well as extensive experiences in the scholarly activities of the Petroleum History Institute and AAPG's History of Petroleum Geology Forum, editing *Oil-Industry History Journal*, and research and publications in this field for nearly two decades. I look forward to seeing you and learning from you as well.

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Since 1972

Rasoul Sorkhabi, PhD

Research Professor

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Research Interests

- Regional Geology
- Tectonics & Structural Geology
- Petroleum Systems & Plays
- Trap and Seal Analysis
- Geochronology & Thermochronology
- Well Logging & Formation Evaluation

Rasoul joined EGI as a Research Professor in 2003. Prior to EGI, he worked for Japan National Oil Corporation and Arizona State University. Rasoul holds B.Sc. and M.Sc. degrees in geology from India and a Ph.D. in geology from Japan. A native of Iran, he has lived most of his life in the United States, Japan, and India, and is multi-lingual. Rasoul is a member of AAPG, AGU, GSA, EAGE, etc. He has served as a contributing editor for *GeoExPro* and *Earth*, is a member of editorial board for *Journal of Earth Systems Science*, a member of AAPG History of Petroleum Geology Committee, a member of the GSA Academic & Applied Geoscience Relations Committee, and a member of the Advisory Board on Springer Publisher's Global Energy Program. Rasoul has published and presented hundreds of papers, is co-editor and co-author of *GSA Special Paper 328* (1999), *AAPG Memoir 85* (2005), *Tectonophysics Special Issue Volume 451* (2008), *Geological Excursions Around Miri, Sarawak* (2011), *GSA Special Paper 525* (2017) and *Geological Society London Special Publication 465* (2018).

Professional Philosophy: Regional Geology & Basin Evolution

Rasoul believes that the need to understand geologic processes and records in their evolutionary contexts calls for a holistic approach to basin analysis. Towards this end, his research focuses on constructing regional databases, integrative tectonostratigraphic records, play fairway maps, and paleofacies maps through time. Moreover, he investigates the impact of basement tectonics and plate settings on the distribution or destruction of plays.

Structures & Fluid Flow

An important application of structural investigation is to better understand fluid flows in rocks. Fault seals compartmentalize reservoirs, thus dismembering and localizing pools; leaking faults are risk factors in exploration. Fractures play critical roles in fluid flow on basin to prospect scales, and the significance for very low-permeability rocks is amplified in view of a major industry shift toward unconventional resources.

Back to the Source

After conducting a large number of regional geology projects, Rasoul is currently Principal Investigator for EGI's new research initiative "Source Rocks Consortium: Source Rocks in Space & through Time." This is essentially motivated by the recent convergence of conventional and unconventional hydrocarbon resources at the source-rock level and the question of why rich source rocks are located where they are in time and space.

Global Experience

Rasoul has over two decades of academic and industry experience, and has worked on projects in various parts of the world, from the fold-and-thrust belts through Tethys and Gondwana to deepwater toe-thrusts. Focus regions include: Asia and the Middle East, Africa, and North America.

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