ROCK TO CLOUD:
GEO-EXPLORATION
EMPOWERING
ENERGY EVOLUTION

SOCIETY OF PETROLEUM GEOPHYSICISTS INDIA

SPG 2025 JAIPUR

15th Biennial International Conference & Exposition

Post-Conference CE Courses

29th October 2025

NOVOTEL JAIPUR CONVENTION CENTRE
AND JECC, JAIPUR, RAJASTHAN, INDIA

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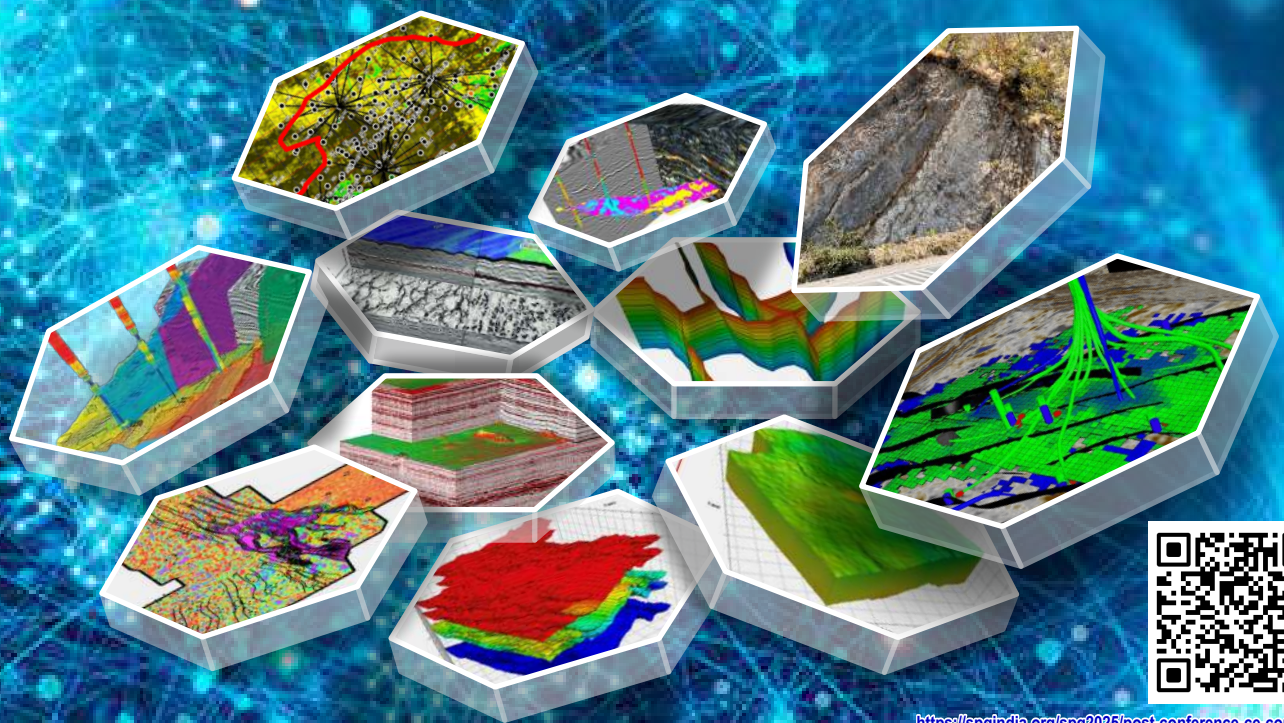


https://spgindia.org/spg2025/post-conference-ce-courses

FOREWORD

The Society of Petroleum Geophysicists (SPG)-India, with a distinguished legacy of more than three decades in advancing geoscience and exploration excellence, is proud to present its flagship conference, **"Rock to Cloud : Geo-Exploration Empowering Energy Evolution".** SPG has consistently served as a catalyst for knowledge exchange, innovation, and collaboration within the geoscience community in India and globally. This conference upholds that tradition, offering a premier platform where pioneering research, cutting-edge technologies, and practical industry experience converge to shape the future of energy exploration and development.

In alignment with SPG's commitment to professional growth and technical advancement, we are pleased to organize ten post-conference Continuing Education (CE) courses. These programs have been carefully curated to address contemporary challenges and opportunities in exploration and production. Each course will be delivered by leading industry experts and renowned academicians, ensuring participants gain both advanced technical knowledge and practical insights into emerging industry trends.

The CE Courses include:

- Integrating Rock Physics and Geological Processes for Quantitative Interpretation and Subsurface Characterization
- Fiscal Regimes: The Indian Growth Story
- Sequences to Simulations: An Integrated Overview on Sequence Stratigraphy and Forward Stratigraphic Modelling
- Breaking Through Imaging Challenges: The Power of High-Density Surveys (OBN) and Applications on Carbon Storage
- Advanced Seismic Reservoir Characterization: Rock Physics, Seismic Inversion and Deep Learning
- Characterization of Unconventional Reservoirs and Emerging Field Development Strategies
- Competency Development in Tools of Reservoir Management
- Petroleum Exploration in Deepwater Settings: Depositional Controls and Petroleum Systems
- Overview of Oilfield Geomechanics
- FWI Concepts and Methods with Case Studies

These courses encompass a broad spectrum of critical disciplines, from advanced imaging and reservoir characterization to fiscal frameworks and frontier exploration strategies, equipping professionals with the expertise required to navigate an evolving energy landscape.

We warmly invite all participants to take advantage of these exceptional learning opportunities, engage directly with industry leaders, and enrich their understanding through meaningful discussions with peers. Active participation will not only enhance professional competencies but also contribute to the shared progress of the geoscience community.

SPG extends its sincere appreciation to the instructors, delegates, and sponsors whose contributions make these programs possible. We are confident that these short courses will inspire innovation, strengthen professional networks, and reaffirm SPG's role as a trusted leader in fostering geoscience excellence.

Ranbir Singh
President-SPG India

CE COURSE - 1

Integrating Rock Physics and Geological Processes for Quantitative Interpretation and Subsurface Characterization

Dr. Per Avseth
Dig Technology

LinkedIn Profile Link: https://www.linkedin.com/in/per-%C3%A5ge-avseth-746a116/

LEVEL : INTERMEDIATE

Course Description:

The field of rock physics represents the link between qualitative geologic parameters and quantitative geophysical measurements. Rock physics is a key technology in petroleum geophysics and beyond, and is an integral part of quantitative seismic interpretation. The application of rock physics tools can reduce exploration risk and improve reservoir forecasting in the petroleum industry, and be useful for monitoring of CO2 sites or geothermal aquifers.

This course covers fundamentals of rock physics, ranging from basic laboratory and theoretical results to practical recipes that can be immediately applied in the field, presenting qualitative and quantitative tools for understanding and predicting the effects of lithology, pore fluid types and saturation, on seismic properties.

The importance and benefit of linking rock physics to geologic processes, including depositional and compactional trends as well as tectonic uplift and unloading, are key to this course, which demonstrates how to build so-called rock physics templates that can be used to interpret both well log and seismic inversion data in terms of geological trends and reservoir properties. The course includes practical examples and case studies, as well as suggested work flows, where rock physics models are combined with well log and prestack seismic data, sedimentologic information, inputs from basin modeling and statistical techniques to predict reservoir geology and fluids from seismic amplitudes.

Course Outline:

1. Background theory
2. Rock physics and geological processes
3. AVO feasibility modeling
4. Rock physics templates
5. Quantitative interpretation case examples

Course Objective:

1. Learn some basic rock physics theory
2. Get to know the link between rock physics properties (Vp, Vs, density) and geological processes (deposition, compaction, uplift)
3. Learn how to analyse rock physics templates in terms of lithology, fluids and geological trends.
4. Get an overview of relevant QI workflows

Prerequisites:

Basic to intermediate math and physics skills, intermediate geoscience skills.

CE COURSE - 2

"Fiscal Regimes – The Indian Growth Story"

Mr. D Purkayastha
Ex ONGC

Mr. Sanjay Chawla
Ex ONGC

LinkedIn Profile Link: https://www.linkedin.com/in/debashish-purkayastha-2b35724b
LinkedIn Profile Link: https://www.linkedin.com/in/sanjay-chawla-b6936152/

LEVEL : INTERMEDIATE

Course Description:

The course covers the following aspects

- **E&P Fiscal Regimes** in Indian Upstream Hydrocarbon Sector
- **Acts & Rules** which govern **Indian E&P** sector.
- **E&P Contracts** in India

Course Outline:

1. Introduction to E&P sector since inception
2. Features of different Fiscal regimes
   a. Nomination
   b. Pre NELP
   c. NELP
   d. HELP (OALP/DSF)
   e. CBM
3. Acquisition of Acreages
4. Contract Management (PSC/RSC/DSF)
5. E&P Collaboration and Joint Ventures
6. Reservoir Continuity

Course Objective:

Awareness programme on Evolution of Regulations and Processes of Indian Upstream Hydrocarbon Sector

Prerequisites:

Participants can be from any discipline engaged with Upstream Hydrocarbon Sector

CE COURSE - 3

Sequences to Simulations:

An Integrated Overview on Sequence Stratigraphy and Forward Stratigraphic Modelling

LEVEL : INTERMEDIATE

Mr. Florent Desfromont Verdiere
Beicip-Franlab

LinkedIn Profile Link: https://www.linkedin.com/in/florent-desfromont/

Course Description:

This course will discuss multi scale sedimentological and stratigraphic characteristics of sedimentary basins, introduce sequence stratigraphic concepts and highlight the application of these concepts in predictive Forward Stratigraphic Modeling (FSM) with DionisosFlow.

Course Outline:

1. Multiscale sedimentological and stratigraphic architecture and sequence stratigraphic concepts.
2. Forward Stratigraphic Modeling (FSM) concepts and application.
3. Uncertainty analysis

Course Objective:

1. Provide a good understanding of sedimentary basins and a grasp of sequence stratigraphy as a tool.
2. Introduce the main aspects and application of FSM on basin scale (reservoir, seal, and source rock characterization) and reservoir scale as a numerical method to integrate and validate sequence stratigraphic framework.
3. Highlight the uncertainties in the shown method and discuss the work flows to quantify risk and uncertainty.

Prerequisites:

Basic knowledge in geology, sedimentology, and stratigraphy.

CE COURSE - 4

Breaking Through Imaging Challenges:

The Power of High-Density Surveys (OBN) and applications on Carbon Storage

Mr. Antoine Michel
Viridien

Mr. Xiaodong Wu
Viridien

LEVEL : INTERMEDIATE

LinkedIn Profile Link: https://www.linkedin.com/in/amichel/
LinkedIn Profile Link: https://www.linkedin.com/in/xiaodong-wu-30232aa

Course Description:

This course aims at introducing the solution to obtain the best processing: dense acquisitions for land and OBN. We will also discuss the processing strategies and Imaging by FWI for said surveys, before expanding to Carbon Storage.

Course Outline:

1. Impact of modern acquisition design and sources on final images
2. Insights into dense survey processing -land
3. OBN imaging with FWI examples
4. Applications of the latest processing techniques for Carbon Storage

Course Objective:

1. Understand the benefit of modern dense acquisitions designs with various sources
2. Understand the specific processing techniques required for dense acquisitions
3. Understand what long offsets can bring to the final image through FWI
4. Introduce carbon storage and reservoir analysis principles, and use of seismic imaging systems

Prerequisites:

Understanding of seismic data processing sequence

CE COURSE - 5

Advanced Seismic Reservoir Characterization:

Rock Physics, Seismic inversion, and Deep Learning

Ms. Jyoti Malik
Geosoftware

Mr. Akash Mathur
Geosoftware

LEVEL : INTERMEDIATE & ADVANCED

LinkedIn Profile Link: https://www.linkedin.com/in/jyoti-malik-72120953
LinkedIn Profile Link: https://www.linkedin.com/in/akashmathur17/

Course Description:

Basic concepts of rock physics and importance in seismic reservoir characterization along with data preparation for seismic inversion and deep learning methods. Seismic inversion starting from basic concepts moving to deterministic and geostatistical inversion will be covered in detail. Artificial Intelligence, Machine and Deep Learning will be discussed with an emphasis on convolutional neural network architecture along with an application in petroleum geoscience for simultaneous prediction of elastic and reservoir properties will be covered.

Course Outline:

1. Introduction to Rock physics, Seismic Inversion, Artificial Intelligence, Machine & Deep Learning
2. Seismic inversion from deterministic to geostatistical- choice and benefits
3. Convolutional Neural Network (CNN) architecture and common elements
4. Application of deep learning on real seismic data for estimation of elastic and reservoir properties

Course Objective:

By the end of the course, students will be able to demonstrate and acquire the following:

- Understanding about rock physics and its role in seismic reservoir characterization
- Thorough understanding of various methods of seismic inversion
- Artificial Intelligence, Machine Learning and Deep Learning
- Convolutional Neural Network and its elements
- Rock Physics role in helping to generate different geological scenarios and synthetic images for deep learning i.e., convolutional neural network.
- Elastic and reservoir properties estimation and informed decision making in exploration, appraisal and field development stage of field life cycle.

Prerequisites:

Professionals from geosciences and petroleum background involved in petrophysics, rock physics, seismic interpretation, geological modelling and seismic inversion and having prior knowledge of seismic and well data integration.

CE COURSE - 6

Characterization of Unconventional Reservoirs and Emerging Field Development Strategies

Mr. J P Dobriyal
ONGC

LinkedIn Profile Link: https://www.linkedin.com/in/j-p-dobriyal-2b843a150/

LEVEL : INTERMEDIATE TO ADVANCED

Course Description:

This course explores the unique properties of unconventional reservoirs and equips learners with the latest tools and strategies for their development. It integrates geology, geophysics, petrophysics, reservoir engineering, and data analytics to prepare attendees for real-world field applications.

Course Outline:

1. Global Energy Demand
2. Global Energy Transition
3. Future of Oil and Gas Exploration
4. Physics of Reservoirs
5. Unconventional Reservoirs
6. History of Unconventional Resources
7. Reservoir Characterization of Unconventional Plays
8. Volumetric Estimation
9. Exploration and Appraisal Lifecycle
10. Field Development
11. Emerging Field Development Strategies

Course Objective:

1. To equip professionals with a comprehensive understanding of the geological, petrophysical, and engineering principles governing unconventional hydrocarbon reservoirs.
2. The course aims to develop proficiency in advanced reservoir characterization techniques, geomechanical analysis, and cutting-edge field development strategies and data-driven optimization.
3. By the end of the course, learners will be able to critically evaluate reservoir performance, design effective development plans.

Prerequisites:

Knowledge of basic Geoscience & reservoir engineering

CE COURSE - 7

Competency Development in Tools of Reservoir Management

Dr. R V Marathe
Reservoir Engineering Consultant

LinkedIn Profile Link: https://www.linkedin.com/in/rajendra-marathe-00779093

LEVEL : INTERMEDIATE

Course Description:

The course addresses the issue of the importance of mastering the tools of Reservoir Management for maximizing hydrocarbon production through IOR/EOR

Course Outline:

1. Presentation on Reservoir Management for Improved and Enhanced Oil recoveries
2. Some tools for quick development of gas fields
3. Applications of Oil Material balance
4. Coning Problems analysis and mitigation

Course Objective:

Equip the Subsurface Personnel with simple tools to understand Reservoir Performance and take remedial actions Sharpening skills through use of tools for both Reservoir Development & Reservoir Management.

Prerequisites:

Any person in subsurface disciplines with a flair for computations, knowledge of Python / Any programming language desired but not a must.

CE COURSE - 8

Petroleum Exploration in Deepwater Dettings:

Depositional Controls and Petroleum Systems.

LEVEL : FOUNDATION TO ADVANCED

Dr. Sandip Kumar Roy
Geoscience Consultant

LinkedIn Profile Link: https://www.linkedin.com/in/dr-sandip-k-roy-9222039/

All levels from fresh graduates to Experienced Exploration Managers can attend. Geophysicists, Geologists, Reservoir Engineers, Geochemists and Academicians in petroleum field are welcomed.

Course Description:

The course describes the sedimentary deposition in deepwater settings , the occurrence and exploration for hydrocarbons in the context of worldwide discoveries and the Indian deepwater basin potential.

Course Outline:

1. Introduction to petroleum exploration in deepwater settings. Global over view.
2. Recent Key discoveries worldwide and the Indian perspective
3. Deepwater processes in sedimentation: MTCs , Turbidites, Contourites and depositional models
4. Petroleum system elements: source rocks, reservoir (elements, architecture, and quality), Trap styles, Seals.
5. Seismic Imaging and Interpretation. Case studies from divergent and convergent margins.
6. Sequence stratigraphy in deepwater settings.
7. Technology, future and summary

Course Objective:

To help participants to understand:

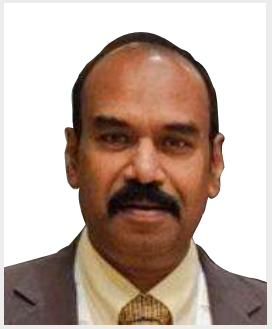
1. Overview and understanding nuances of deepwater sedimentary deposition, through outcrop, core, geophysical well log and seismic interpretation.
2. Sedimentary processes and depositional models.
3. Recent worldwide hydrocarbon discoveries and the potential for hydrocarbon discoveries in Indian deepwater deposits.
4. Deepwater Exploration imperatives : Way ahead.

Prerequisites:

Background in Geoscience.

CE COURSE - 9

Overview of Oilfield Geomechanics



Dr. Satya Perumalla
Baker Hughes

LEVEL : FOUNDATION

LinkedIn Profile Link: https://www.linkedin.com/in/satya-perumalla-15a30a6/

Course Description:

Geomechanics addresses the interaction between rock strength, pressure, and stress in the earth, along with engineering practice, to improve performance in drilling, production, completions and other areas. This course introduces the principles of in-situ stress and pore pressure, rock mechanics, the measurement and constraint of stress in both vertical and inclined boreholes, and their application to various oilfield problems.

This short course touches on various applications of geo-mechanics at different stages, beginning with drilling to field development and reservoir management. Relevant real-world case examples provide vivid illustrations of the value and impact of geomechanical modelling.

Course Outline:

1. Prediction of Pore and fracture pressures.
2. Introduction to the data and techniques used for building Geomechanical Models (1D / 3D/4D).
3. Stress Orientation: Regional vs Local
4. Analysis of Wellbore stability and understanding about different types of shale.
5. Significance of GeoMechanical model: Sand Production, Hydraulic Fracturing, Energy Transition, etc.

Course Objective:

Role of Geomechanics in Oil & Gas Industry

Prerequisites:

Fair knowledge of Drilling challenges, pore-pressure problems, log interpretation and geological understanding.

CE COURSE - 10

FWI Concepts and Methods with Case Studies

Mr. Madhav Vyas
bp

LEVEL : INTERMEDIATE

LinkedIn Profile Link: https://www.linkedin.com/in/madhav-vyas-bba8726/

Course Description:

In this course the attendees will learn basics of Full Waveform Inversion (FWI), terminology and different variants of the technology. The course will go over important concepts and highlight components that make up for successful FWI implementation. Latest and greatest developments in the field will be shared along with examples and key references.

Course Outline:

1. Introduction and background
2. Theory and Concepts
3. Examples and Applications of FWI

Course Objective:

1. Introducing key FWI concepts
2. Exposing the attendees to latest developments & future directions
3. Sharing examples and applications

Prerequisites:

Some familiarity with Seismic Data Processing and Signal Processing

A series of Post-Conference Continuing Education (CE) Courses, meticulously designed to offer in-depth learning on specialized topics of current relevance to the geoscience and energy sectors. Led by distinguished instructors and domain experts from across the globe.

POST-CONFERENCE CE COURSES




REGISTRATION PORTAL FOR CE COURSES WILL OPEN FROM
15 AUGUST, 2025

COURSE FEE

INDIAN DELEGATE:

INR 18,000+ GST@18%

OVERSEAS DELEGATE:

US$ 450+ GST@18%

KEY DATES

01 June-10July 2025	SUBMISSION OF TECHNICAL PAPERS
15July-31 Aug 2025	EXPOSITION BOOTH REGISTRATION
16 Aug-30 Sept 2025	EARLY BIRD DELEGATE REGISTRATION
15 Aug-15 Oct 2025	CE COURSE REGISTRATION
15 Sept-15 Oct 2025	SPOUSE REGISTRATION
26 Oct-28 Oct 2025	SPG CONFERENCE & EXPOSITION
29 Oct 2025	CE COURSES

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