EAGE

EUROPEAN ASSOCIATION OF GEOSCIENTISTS & ENGINEERS

EDUCATION DAYS
OSLO 2019

23-24 OCTOBER 2019 | OSLO, NORWAY

EAGE EDUCATION

www.LearningGeoscience.org

Welcome
to Oslo!

EAGE is pleased to invite you
to visit Oslo for our
Edcuation Days Oslo 2019

Dear Colleagues,

The European Association of Geoscientists and Engineers (EAGE) recognizes the necessity for high-quality training and education throughout the lifetime of the industry professional. Indeed, we see educational tools as a key deliverable to our membership, especially relevant in our rapidly changing industry, and develop these accordingly. To this end, I would like to introduce the EAGE Short Course Catalogue in which you will find an overview of more than 90 short courses from a range of experienced instructors from industry and academia. We have carefully selected these courses to be multidisciplinary, in keeping with our association's ethos, and to keep abreast of the latest trends in geoscience and engineering. Many of our courses are designed to be easily digested in bites of one to two days, sometimes longer depending on the topic, and are delivered by specialists who blend classroom theory and practical application. The EAGE organizes its courses in different formats worldwide:

• EAGE Education Days
• EAGE Education Tours
• Public short courses
• In-house courses

We also include abbreviated versions of our educational material as E-Lectures on YouTube. I strongly encourage you to participate in our short courses, which I am sure that you will find both high quality and professional in nature.

Finally, I should add that the EAGE is continually refreshing the catalogue to ensure it keeps pace with, and is relevant to, current industry developments. Should you have any suggestions or proposals for new courses please let me know.

I wish you an enjoyable and informative learning experience!

Colin MacBeth I Education Officer (EAGE Board)

Short Course Programme

Advanced Marine Seismic Acquisition Techniques
Dr. Mike Branston

Challenges and Solutions in Stochastic Reservoir Modelling: Geostatistics, Machine Learning and Uncertainty Prediction
Prof. Vasily Demyanov

Seismic Attributes and Their Applications in Seismic Interpretation
Dr Behzad Alaei

Venue
Scandic Fornebu
Martin Linges vei 2
NO-1364
Fornebu, Norway

Accreditation
In March 2013 EAGE became the first official Continuing Professional Development (CPD) Provider of the "European Geologist" title, which is a professional accreditation established by the European Federation of Geologists (EFG). In order to obtain and maintain this title, the holder must provide a record of high quality CPD activities, which include the short courses like the ones presented in this brochure. For an overview of the provided points for EAGE Short Courses and for more information about this accreditation system and corresponding EAGE learning activities please visit www.eage.org and www.LearningGeoscience.org.

Sponsorship
Education Days Oslo 2019 offers excellent sponsorship opportunities to create high visibility. For more information, please refer to the EAGE website or contact us at eage.events@eage.org.

EAGE Economic Hardship Programme
EAGE recognizes the current challenging status of the industry and, priding itself on the inclusive character of the Association, now has a special economic hardship assistance programme in place to reach out to its members.

EAGE Short Course discount
EAGE aims to assist its long-term members who are currently unemployed by providing contributions towards educational programmes. Under this element of the EAGE Economic Hardship Programme, members currently unemployed can attend public short courses at the Education Days London for a discounted course fee equal 75 euros for either one- or two-day course. The discounted registration fee is the same as in another supported programme – EAGE Education Tours, where everyone can benefit from a discounted fee.

For more information we would like to refer you to the event website at events.eage.org

Registration Fees
All fees include digital course material, lunch and coffee breaks.

One-day Course

Registered and Paid	Until 21 July	22 July - 18 August	19 August - On-site
EAGE Member	€ 480	€ 585	€ 685
EAGE Platinum Member	€ 480	€ 480	€ 480
EAGE Green Member	€ 530	€ 635	€ 735
Non-member	€ 580	€ 685	€ 785
EAGE Student Member	€ 240	€ 290	€ 340
EAGE Student Green Member	€ 215	€ 265	€ 315
Student Non-member	€ 290	€ 340	€ 390

Two-day Course

Registered and Paid	Until 21 July	22 July - 18 August	19 August - On-site
EAGE Member	€ 705	€ 760	€ 860
EAGE Platinum Member	€ 705	€ 705	€ 705
EAGE Green Member	€ 755	€ 810	€ 910
Non-member*	€ 805	€ 860	€ 960
EAGE Student Member	€ 355	€ 380	€ 430
EAGE Student Green Member	€ 380	€ 430	€ 480
Student Non-member*	€ 430	€ 480	€ 530

DISCIPLINES

Geophysics Geology Reservoir Characterization Near Surface Engineering Training and Development

Advanced Marine Seismic Acquisition Techniques

Dr. Mike Branston (WesternGeco, London, United Kingdom)

CPD Points: 5

Course Description

The course starts with an overview of conventional 3D towed streamer seismic acquisition and then concentrates on recent advances that have enabled dramatic improvements in seismic data quality and interpretability. While the development of 3D marine seismic acquisition since the 1980s has been arguably the single most effective technique in improved drilling success, the recent addition of 'true 3D' or 'wide-azimuth' techniques has led to improved sub-surface illumination and imaging. In addition to improved imaging, improved resolution has been achieved through so-called broadband techniques achieved through novel source and streamer geometries and multi-component receivers.

The course compares wide-azimuth towed streamer seismic acquisition as well as sea-bed seismic acquisition – ocean bottom cable (OBC) and ocean bottom node (OBN) – both from a design and practical implementation perspective as well as looking at relative cost-benefits. In the case of sea-bed seismic, the value of multi-component recording is reviewed. Broadband seismic techniques are explained in terms of source and receiver design, practical implementation and interpretational benefits. Time-lapse or 4D acquisition techniques are reviewed and discussed with an emphasis on repeatability of towed streamer, re-deployable OBC / OBN and permanent reservoir monitoring. Finally, the course reviews the latest developments in simultaneous source technology, which are attempting to improve dramatically the data density and / or operational efficiency of seismic acquisition.

Participants' Profile

The course is designed for geophysicists and explorationists who wish to gain an overview of recent developments in 3D marine seismic acquisition. Participants are assumed to have a working knowledge of conventional seismic acquisition techniques and their use in exploration and development of hydrocarbon resources.

Challenges and Solutions in Stochastic Reservoir Modelling: Geostatistics, Machine Learning and Uncertainty Prediction

Prof. Vasily Demyanov (Heriot-Watt University, Scotland)

CPD Points: 10

Course Description

Reservoir prediction modelling is subject to many uncertainties associated with the knowledge about the reservoir and the way they are incorporated into the model. Modern reservoir modelling workflows, which are commonly based on geostatistical algorithms, aim to support development decisions by providing adequate reservoir description and predict its performance. Uncertainty about reservoir description needs to be accounted for in modelling workflows to quantify the spread of reservoir predictions and its impact development decisions.

The course aims to build awareness of the impact the modelling choices on the reservoir predictions and their relation to the way uncertainty is incorporated into reservoir modelling workflows. The course addresses the problem of tying the workflow with the expected geological vision of a reservoir subject to uncertainty. This is associated with one of the common issues, when standard assumptions of a workflow are not consistent with the model geology or do not reflect possible variations due to existing uncertainty.

The course demonstrates the implementation of geostatistical concepts and algorithms in geomodelling workflows and the ways uncertainty is accounted for in reservoir description and predictions. The course includes an overview of the state-of-the art conventional techniques and some novel approaches, in particular machine learning for reservoir description.

Machine learning provides new opportunities in data integration and the model control to tackle the modelling challenges related to non-stationary multi-scale correlation structure and complex connectivity patterns in reservoirs. Novel machine learning techniques are good at capturing dependencies from data, when their parametric description is difficult; and controlling the impact of noisy and ad-hoc data.

Participants' Profile

The course is designed for a wide audience of reservoir modelers, geologists and engineers with a range of experience from novices to experienced practitioners.

Seismic Attributes and Their Applications in Seismic Interpretation

Dr Behzad Alaei (Earth Science Analytics, Norway)

CPD Points: 5

Course Description

The course is divided into two parts: attributes review/ applications and workflows. The first part starts with a review of seismic attributes and discusses the noise (random and coherent) reduction as one essential step of all attribute studies. The number of seismic attributes increased dramatically, causing confusion for geoscientists to select the appropriate ones. A series of trace-based attributes, volumetric dip and azimuth, fault detection and enhancement attributes, volumetric curvature and frequency decomposition are presented in this course and, for every attribute, a short theory will be followed by applications using examples from different sedimentary basins. Frequency decomposition is briefly presented with different decomposition methods such as wavelet transform, Fourier transform and matching pursuit analysis. Examples illustrate the interpretation challenges associated with frequency decomposition data interpretation.

The concept of multi-attributes and geobody extraction is introduced at the end of the first part of the course with examples on combinations of amplitude, phase, discontinuity and frequency attributes to visualize different geological objects. Iso-proportional slicing as a powerful interpretation tool is discussed. In the second part of the course stratigraphic and structural workflows will be presented using the acquired attributes. The workflows (and the elements for their planning) aim to show the integration of several attributes for specific interpretation purposes, with examples of stratigraphic (fluvial/ shallow marine clastic systems, attribute expressions of deep water turbidites and carbonate settings) and structural imaging workflows. Lastly, the course analyses the importance of the integration of seismic attribute analysis processes with the other seismic interpretation (qualitative or quantitative) workflows.

Participants' Profile

The course addresses geoscientists involved in exploration and production projects where seismic play a role and who wish to learn the basic theory of the main seismic attributes used in exploration and production, as well as their applications and how to integrate them in exploration and reservoir characterization studies.