Education Days Stavanger 2012

Dear Colleagues,

On behalf of the Board of the European Association of Geoscientists and Engineers (EAGE), please allow me to introduce our multiple short course programme ‘Education Days Stavanger 2012’, which will take place on 12–16 November 2012 in Stavanger, Norway.

The event consists in multiple one-day and two-day short courses delivered by distinguished geoscientists and professionals. The courses are carefully selected to ensure a consistent programme with appeal to a broad geoscience and engineering audience. Two courses are offered in parallel every day, except Friday, thus ensuring all attendees can customize an educational programme appropriate to their own needs and interests.

Education Days is an ideal platform to increase knowledge and awareness of new methodology for geoscience specialists. These short courses do not only reflect the latest scientific developments in geosciences but also demonstrate applications of these theories to real-life problems.

This year the event will be held at the Scandic Stavanger Forus Hotel, which is conveniently located in the Forus Business District, close to Sola Airport and Stavanger City Centre.

I strongly encourage you to participate in one or more short courses during the EAGE Education Days in Stavanger. I am sure that you will be positively surprised by the high quality and professionalism of the courses.

Paul Sava
Education Officer (EAGE Board)

Course Programme

1. Monday 12 November
Advanced Marine Seismic Acquisition Techniques
Gordon Brown (WesternGeco)

This course is designed to familiarize participants with the latest developments in marine seismic acquisition including wide-azimuth with its many geometry variants, broadband techniques (boosting the high and low frequencies), sea-bed receivers for both P-wave and converted-wave recording, time-lapse surveys and the emerging technology of simultaneous source acquisition.

Participants’ profile
This 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 the seismic method and its use in the exploration and development of hydrocarbon resources.

2. Monday 12 & Tuesday 13 November
4D Seismic for Reservoir Management *
Ian Jack (Independent Consultant)

After a short perspective on the development of 4D seismic from the 1980s to its routine use in mature areas, the course covers the basics of rock and fluid physics. It moves on to describe the current best practice and the technical and operational requirements for successful implementation of time-lapse technology whether for hydrocarbon extraction or for CO₂ injection.

Participants’ profile
This course is aimed principally at geoscientists who wish to be able to commission 4D projects or to work with them successfully. It will also be useful for reservoir engineers and petrophysicists and for those who need to steer the direction of seismic technology within their companies.

3. Tuesday 13 November
Applied AVO
Dr Anthony Fogg (Seismic Imaging Processing)

This one-day course introduces the basics of AVO, rock physics and seismic inversion (without lots of equations) supplemented by several case studies showing the practical application of the methods and potential pitfalls to be aware of when using these techniques. The course is aimed at people with little or no practical AVO experience and is designed to equip them with some basic techniques to perform AVO work themselves and to critically assess AVO, rock physics and seismic inversion studies when presented with them. The course is conducted in an open seminar format with the key course notes provided to the participants. Active discussion and shared learning are encouraged.

Participants’ profile
Interpreters, geologists, geophysicists and other geoscience experts who have an interest in understanding how AVO, rock physics and seismic inversion is applied in real world studies.
Seismic attributes have been increasingly used in both exploration and reservoir characterization and have been integrated into the seismic interpretation process. Seismic attributes will be introduced with their applications in seismic interpretation using examples from different sedimentary basins and also through certain attribute analysis workflows. It is aimed to provide geoscientists with the minimum required theory of how each attribute is generated with greater emphasis on the applications in exploration and reservoir characterization. Elementary trace-based attributes, dip-azimuth, coherence, fault attributes and frequency decomposition will be presented individually as well as in different workflows to identify and extract certain geological objects.

Participants’ profile
This course is aimed at geoscientists involved in exploration and production projects where seismics play a role and who wish to learn:

• the basic theory of main seismic attributes used in exploration and production,
• their applications and how to integrate them in exploration and reservoir characterization studies.

5. Wednesday 14 & Thursday 15 November
Seismic Imaging: A Review of the Techniques, their Principles, Merits and Limitations
Etienne Robein (ERT)

As the search for new resources means that we are forced to maximize the production of discovered reservoirs and explore new ones in domains that are increasingly complex, seismic imaging is becoming more and more important as a tool. The course presents the current techniques used to produce accurate images of the subsurface. Their respective pros and cons are inferred from their principles and illustrated by synthetic and real cases that are discussed with attendees. Special emphasis is placed on anisotropic velocity model building using either rays or wavefield extrapolation. The impact of recent developments in data acquisition is explained and illustrated.

Participants’ profile
The course is aimed at geoscientists involved in exploration and production projects where seismics play a role and who wish to:

• learn more about seismic imaging concepts and the terminology used by seismic processors;
• improve their critical view on the seismic data sets they are using in their projects;
• have a well-argued selection of the imaging method to apply to the seismic data shot for their projects;
• have a better appreciation of issues and solutions in velocity model building

The course will also benefit students who wish to have a first acquaintance to reflection seismics in general and seismic imaging in particular.

6. Thursday 15 November
Seismic Surveillance for Reservoir Delivery (EET 6) *
Olav Barkved (BP)

This course aims to provide some context for what is driving the dynamic changes linked to producing a hydrocarbon reservoir and what we should expect to observe using seismic technologies in various geological settings. We will address key issues that impact the feasibility of time-lapse seismics and discuss established methods. However, the focus will be on ‘new’ technologies, the use of permanent arrays, frequent seismic surveying and integration.

The intention is to inspire, educate and possibly entertain individuals on how to embark on a seismic surveillance project and stimulate new ideas for those with some experience in the topic.

The course will be biased towards marine seismic applications but this should not prohibit possible usage on land.

Participants’ profile
This course should be of interest to managers, geoscientists and reservoir and petroleum engineers who are aiming to integrate time-lapse seismic data into the next level of technical and business decisions and anyone else who sees the benefit of tracking changes in the subsurface in a wider sense.

7. Friday 16 November
Microseismicity – A Tool of Reservoir Characterization
Prof. Serge Shapiro (Freie Universität Berlin)

This course provides a systematic introduction into a quantitative description of fluid induced microseismicity. The course will include elements of earthquake physics, geomechanics, rock physics and poromechanics. A clear relation to passive seismic monitoring and reservoir characterization will be established. Real data examples related to hydraulic fracturing and reservoir stimulation will be broadly used and discussed.

Participants’ profile
Geophysicists, geologists, petrophysicists, reservoir engineers, graduate and postgraduate students, researchers, interpreters and other persons involved in geosciences.

* The 2-days course will focus on the basics of the method and will provide a wide industry perspective in addition to a 4D numerical modelling exercise. The 1-day course focuses on the use of frequent monitoring, compacting reservoirs and business drivers, and will use examples from the Valhall field to illustrate models of seismic surveillance.
Venue
Scandic Stavanger Forus
Bjødnabeen 2
4033 Stavanger
Norway
Tel.: +47 21 61 48 00
www.scandichotels.com

Daily time schedule
Registration 08:15-08:45 hrs
Courses 09:00-17:00 hrs

Sponsorship
Education Days Stavanger 2012 offers excellent sponsoring opportunities to create high visibility. For more information, please refer to the EAGE Education website or contact us at education@eage.org.

Registration fees
All fees include course material or an official course book (EET 6), lunch and coffee breaks.

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* EET 6 is part of EAGE Education Tour (EET). EETs are subsidized by EAGE, and have therefore special prices. With these tours, EAGE fulfils its mission to give its members and others access to the latest developments at an affordable price.

** Participate in as many short courses as you wish as long as dates do not overlap.

For online registration and group bookings, please refer to the EAGE Education website: www.learninggeoscience.org.