An Intensive 5 Day Training Course

Applied Biostratigraphy and Sequence Stratigraphy in Oil Exploration & Development

12 - 16 Nov 2017, Dubai
Why ChooStir Aining CourSe?

Biostratigraphy is often run as a service in oil exploration & development for age and palaeoenvironmental interpretation. But the power that can be provided by critical insight of the data generated for detailed sequence analysis including unconformities and sequence breaks plus the identification of flooding and condensed surfaces and its use for facies identification (reservoir to non-reservoir) are often not optimally achieved. Subsequently neither are the desired high resolution stratigraphical correlations.

The integration of biostratigraphical data with seismic interpretations and sedimentological and petrographical data utilizes its power most efficiently. This training course sets out to illustrate this best use. The pitfalls with the use of biostratigraphical data will be discussed, which often relates to the geological context in which formations were deposited. By identifying them and often then utilizing them with regards to understanding the geology, this helps to unlock the tool and with it a realization of the possibilities that optimum use of this technique can bring.

This PetroKnowledge training course will introduce the applied use of biostratigraphy and sequence stratigraphy in both an exploration and development context with working examples from Africa, the Middle East, Southeast Asia and Europe, and will also cover both marine and non-marine sediments.

This training course will include:

- An introduction to the different microfossil groups
- A discussion on the laws of stratigraphy and how biostratigraphy can be used to determine a chronostratigraphy
- Which microfossil groups to use for which age of sediments and how they are used as palaeoenvironmental indicators
- What pitfalls to look for and how these can lead to a better geological understanding
- How to use biostratigraphy and bio facies to identify key seismic markers
- How to integrate biostratigraphical data with other geological data (sedimentological, petrographical, geochemical) to maximize its use
- How to use integrated biostratigraphical data to build a high-resolution sequence stratigraphy
- How biostratigraphy can be used in play definition and for play based exploration
- Working examples of applied stratigraphy for exploration and development from Africa, Asia and Europe

What are the goals?

By the end of this training course, participants will be able to:

- Have knowledge of the different microfossil groups and in which ages of sediment and palaeoenvironment of deposition they can be utilized.
- Develop an understanding of how biostratigraphical data can be integrated with other geological data to optimize its use as an interpretative tool
- Develop an enhanced interpretation skill to recognize key seismic markers and how to interpret these as a geological sequence by integrating biostratigraphical data
- Interpret palaeoenvironment of deposition by using biostratigraphical assemblages
- Use biostratigraphy as a predictive tool in exploration and development

Who is this training course for?

This PetroKnowledge training course is suitable for exploration and development geologists, seismic interpreters, sedimentologists, petrographers and other upstream subsurface professionals who are interested in optimally utilizing geological data as a predictive tool in sedimentary basins and for identifying hydrocarbon plays in active petroleum systems.

How will this training course be presented?

The training course will be based around PowerPoint presentations for each module followed by interactive and participative individual and team exercises. There will also be workshop sessions based around real exploration and development examples to get participants to actively become aware of the predictive capabilities of applied biostratigraphy and sequence stratigraphy. Course participants are also encouraged to bring along biostratigraphic data, logs and seismic where appropriate from their own companies so that real working examples can be interpreted.
DAILY AGENDA

Day One: Stratigraphy and an Introduction to Micropaleontology

Competency Description: Understanding the fundamental laws and principles of stratigraphy and biostratigraphy including preparation techniques and an appreciation of all the fossil groups and their stratigraphical ranges.

Key behaviours
- Understand and apply key technical laws and principles
- Apply and use relative versus absolute age dating mechanisms
- Apply chronostratigraphy the under-used tool in exploration
- Discover all the microfossil groups and what their age ranges are and their palaeoenvironmental of deposition

Topics to be covered
- The laws of Stratigraphy
- Age dating methods for sediments and igneous rocks
- The stratigraphical column and chronostratigraphy
- The different microfossil groups and preparation techniques
- Organic microfossils (Palynomorphs) including Acritarchs, Chitinozoans, Dinoflagellates, Pollen and Spores
- Inorganic microfossils including Microforaminifera and Ostracoda

Day Two: Biostratigraphy

Competency Description: How to present and interpret biostratigraphical data and understanding the relationship between biostratigraphy and chronostratigraphy.

Key behaviours
- Prepare and present biostratigraphical data
- Prepare biostratigraphical range charts
- Understand the use of numerical methods in biostratigraphy
- Develop knowledge of how to select which samples and which microfossils should be analysed in a biostratigraphical study
- Learn how to identify index fossils
- Identify which microfossils can be found in which sediment type and of what age

Topics to be covered
- Microfossil evolution through the stratigraphical column
- Building stratigraphical range charts
- First downhole occurrence, last downhole occurrence, fossil assemblages
- Numerical methods, frequency polygons, abundance increases and maxima
- Index fossils
- Stratigraphical type sections and the relation between biostratigraphy and chronostratigraphy

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Day Three: Biostratigraphical Correlations and Correlation Techniques

Competency Description: How to prepare well to well correlations using biostratigraphical data, how to integrate it with other geological data and how to identify and discount spurious or misleading information to optimize the interpretation method.

Key behaviours
- Understand how to generate a biostratigraphical cross section
- Recognize the pitfalls in the use of biostratigraphical data
- Learn how to define a biozonation
- Finding out how best to integrate other geological data
- Discover the relationship and how to integrate geochemical information

Topics to be covered
- Building a biostratigraphical cross section, datum selection
- Pitfalls using biostratigraphical data, downhole caving, reworking, contamination
- Definition of biozones
- Integration of sedimentological and petrographical data
- The integration of geochemical information
- Identification of unconformities / hiatus in the sequences

Day Four: Biostratigraphy, Palaeoenvironment’s and Seismic Sequence Stratigraphy

Competency Description: Using microfossils to identify the palaeoenvironment of deposition, using biostratigraphical and palaeoenvironmental information to identify sequences and sequence boundaries and its integration into a seismic sequence stratigraphy and using biostratigraphy in appraisal and development situations.

Key behaviours
- Discover the use of microfossils as palaeoenvironmental indicators
- Use biostratigraphical data to identify sequences and to determine a sequence stratigraphy
- Integrate biostratigraphical data with well log data to identify unconformities, hiatuses and sequence boundaries
- Develop seismic interpretation skills of sequences for optimum resolution using fully integrated geological data
- Discover the use of biostratigraphical techniques in appraisal and development situations

Topics to be covered
- Hydrocarbon play definition – what is a play
- Integrated biostratigraphy and its use in Play Based Exploration techniques
- The Kalash Formation a Late Cretaceous shelfal carbonate play NW Sirt Basin, Libya
- The Kareem Formation a sub marine Miocene fan play, Gulf of Suez, Egypt
- A Middle Miocene lacustrine fan/delta play, Kra Basin, Gulf of Thailand, Thailand
- Examples of the use of biostratigraphy in development in Libya, Thailand, Ivory Coast

Day Five: Play Definition using Play Based Exploration Techniques and Examples of the Use of Biostratigraphy in Exploration and Development

Competency Description: Learning and applying play-based exploration techniques and the integration of biostratigraphy using real working examples from Libya, Egypt and Thailand and how to use these techniques optimally in active exploration and appraisal situations.

Key behaviours
- Discover the use and the application of play based exploration techniques
- Understand the practical use of play based exploration and integrated biostratigraphy using real working examples
- Develop skills in the application, interpretation and knowledge of the restrictions in different plays of different ages
- Practice by using real examples to integrate biostratigraphical data and then understand how this can be used in play through to prospect definition

Topics to be covered
- Using micropalaeontology for palaeoenvironmental interpretation
- Marine microfossils versus non-marine microfossils
- Preservation of microfossil groups and different lithology's
- Definition of water depth from the different fossil groups
- The identification of sequence boundaries using biostratigraphical data
- Using biostratigraphical data to identify condensed sequences and maximum flooding surfaces
- Using biostratigraphical data to identify lowstand system and high stand system tracts
- Integration of biostratigraphical data and seismic sequence stratigraphy
- The pitfalls, understanding the resolution related to the geology and the limitations

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COURSE DATES, VENUES AND FEES

| 12 - 16 Nov 2017 | Dubai | $4,500 |

This fee is inclusive of Documentation, Lunch and Refreshments

Please use BLOCK CAPITALS to fill in this form. It is important that you read carefully through all information before starting to complete the form.

REGISTRATION DETAILS

Family Name: ____________________________________________
First Name (Mr./Ms.): _________________________________________
Position: ________________________________________________
Company: ____________________________________________________
Mailing Address: ______________________________________________________________________________________________________
Telephone: ______________________ Mobile: ______________________ Fax: ______________________ Email: ______________________

AUTHORISATION

Authorisation By: ______________________________________________________________________________________________________
Position: ________________________________________________
Company: ____________________________________________________
Mailing Address: ______________________________________________________________________________________________________
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IN-HOUSE TRAINING

Maximize your training budget and have several members of your staff, who require specific training, to attend with the advantage of not incurring additional travel costs when attending a ‘public’ training courses & seminars.

Would you like a PetroKnowledge training course delivered at a time or location to suit you? Would you like PetroKnowledge to tailor a course from our comprehensive library of programmes? Or would you like us to create an entirely new, bespoke course to suit the exact needs of your organisation?

Working in partnership with our clients, PetroKnowledge provides an enjoyable, creative learning experience that enables participants to develop their skills and knowledge. We can deliver not only generic, off-the-shelf courses from our extensive learning portfolio, but we can provide tailored as well as bespoke learning on any aspect of skill development or knowledge. Our in-house courses are conducted by the same expert trainers who conduct PetroKnowledge public courses so you can be assured they will fulfill the learning objective of any organisation.
BOOKING TERMS & CONDITIONS

Booking
- Bookings for courses can be made via our website (petroknowledge.com) or by contacting our Registration Desk on +971 2 5577389 or at reg@petroknowledge.com
- For on-line bookings, please select the course that you require and click on the “Register Now” button, following the instructions step by step
- Upon receipt of booking in order, enrollment on the respective training course will be confirmed by Registration Team with all necessary documentation

Invoicing and Payment
- Our fees include course presentation, relevant materials, physical & digital documentation, lunch and refreshments served during entire training. Accommodation charges are not included in the course fees
- Course fees are payable upon booking unless a valid, authorized Purchase Order is provided and accepted
- Invoices will be sent via email/courier to the ID/name and address provided
- We prefer to have the fees payment in our account before the start of training course. However, if your company has a different payment policy, the same should inform us in advance
- The currency of fees is in US Dollars (USD). Payments can be made in USD or UAE local currency AED (Arab Emirates Dirhams) either by Bank Transfer or by Credit Card. Our Bank Account details will be provided on the Invoice
- Please note that we do accept payment by cash, in USD or AED, only for the last minute bookings

Cancellation of Courses
- It may be necessary for PetroKnowledge to amend or cancel any course, course times, instructors, dates or published fees due to unforeseen circumstances and we reserve the right for such changes
- Any amendments will be advised before the course start date and any bookings already paid in full will not be subject to increased fees

Cancellation by Client
- Once you have completed your booking, received your confirmation of enrollment and a dated payment Invoice, you are deemed to have a contract with PetroKnowledge. You reserve the right to cancel this contract given the below terms
- All cancellations must be received in writing at reg@petroknowledge.com and info@petroknowledge.com at least 14 days prior to the training
- After the cancellation period has expired, consideration may be given, on a case to case basis, if a registered delegate nominates a substitute on the same course, shifts to next session of the course or moves to a new course
- For a cancellation request made on or before the statutory 14 day cancellation period, a refund may be given or a credit note issued which can be used against future course fees
- A 25% administration fee (of the total course fee at the time of booking) will be charged for any cancellations made outside of the statutory cancellation period

Attendance Certificate
- The daily course schedule should be accurately followed to ensure undeterred implementation of our training
- All delegates, who participated in their course throughout, will receive the Certificate of Completion on the last day
- Please report any foreseeable absences to a PetroKnowledge representative or to your sponsors directly
- An absence of three (3) or more sessions of the course will invalidate your eligibility for the Certificate of Completion