

In-Country Skills Development

FOR TECHNICAL PROFESSIONALS IN EXPLORATION AND PRODUCTION



Arndt Peterhaensel
Global Head of Training



Maggie Hystad
Training Manager



Mark Bentley
Training Advisor



Fiona Swapp
Lead Graphic Designer

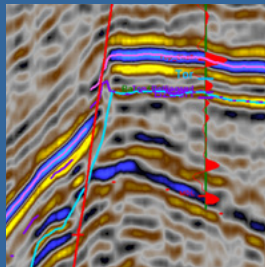
02

*"The highest form of human excellence is
to question oneself and others"*

Socrates

At TRACS Training we believe a successful learning event requires more than the simple presentation of information. Long-lasting learning calls upon the delegate group to engage with enthusiasm and for the tutors to deliver inspirational events which allow a chance to think, discuss and debate.

Experiential learning is therefore core to our events, with tutors motivated not only to pass on knowledge and skills, but to pass on their enthusiasm for the business, their passion for their subject and their experiences from their daily work as practising technical professionals in the E&P business.



E&P Skills Development

Many countries are experiencing growth in the upstream oil and gas sector as exploration discoveries open up new opportunities for significant long-term development programmes.

National oil companies and national oil and gas ministries will adapt to meet these opportunities in the capacity of operators, joint venture partners or authorising bodies.

Such opportunities should ideally lie in the hands of national staff who, as technical professionals, will call on learning and development programmes to build the skills necessary to fulfil their roles.

Skills development is most effective if organised in a structured programme including:

- an assessment of needs
- the design of a capability framework for individuals and
- the structuring of a course programme to meet these needs

This booklet describes the three components above and illustrates briefly what a skills development programme may look like. Such a programme requires support from a number of carefully chosen providers. TRACS Training offers to be one of these; as an independent professional organisation we are also well placed to assist in the structuring of the programme itself.

03

Up-skilling
to meet new
opportunities.

Defining Needs

Capability frameworks

Capability frameworks attempt to define the skills required by individuals in each core discipline within an organisation. They capture the skills that each person should develop in order to perform effectively in their jobs.

As well as defining the subject areas relevant to each individual, the depth of skill should also be identified (see matrix below). Some individuals need only awareness of a topic, others need a more detailed working knowledge and some will attain mastery. For example, a well engineer needs awareness of geoscience, knowledge

of reservoir behaviour and mastery of well completion techniques.

Once established, the training programme required to support these skills developments can be mapped out.

In our view, capability frameworks should be specific to the local environment they apply to, and should be constructed in direct liaison with local line managers and technical leads in-country.

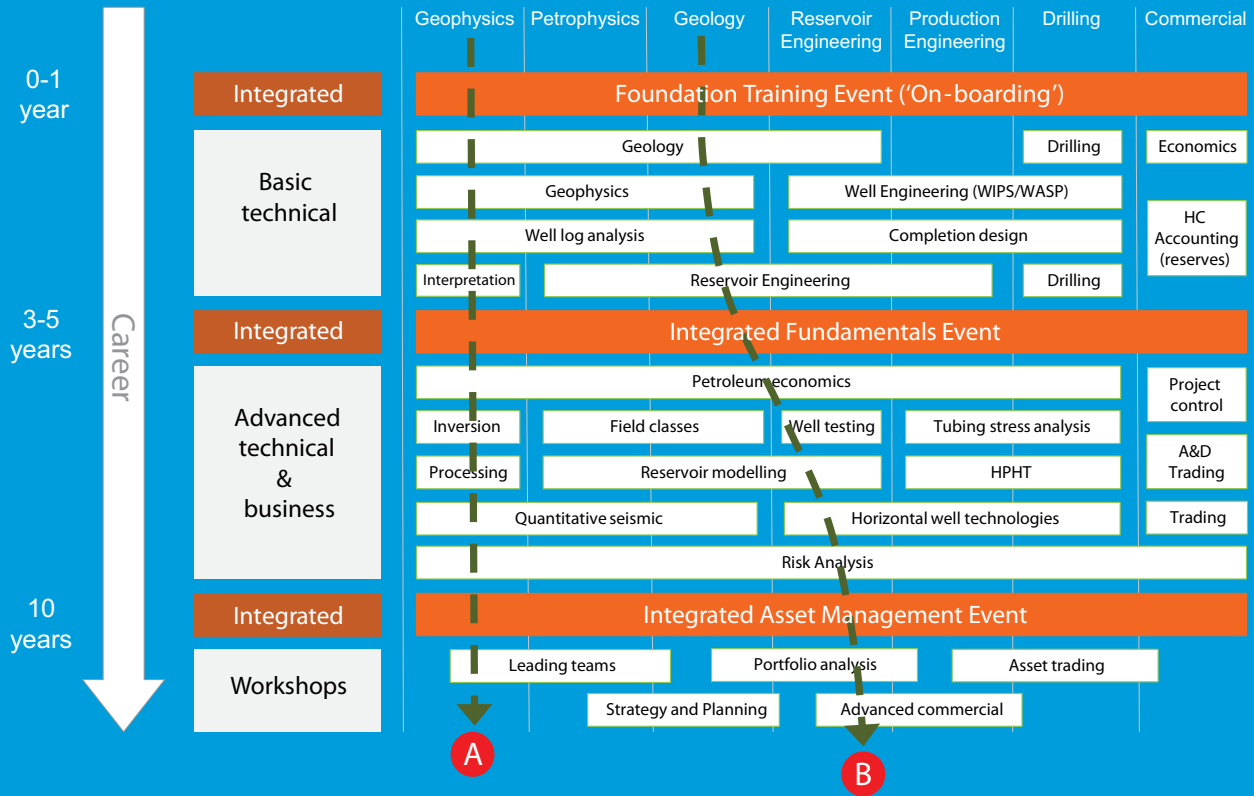
Every area has its specific needs and requires specific, tailored solutions.

Awareness / Knowledge / Mastery Matrix							
	Geophysics courses	Petrophysics courses	Geology courses	Reservoir Engineering courses	Production courses	Drilling courses	Commercial courses
Awareness							
Knowledge							
Mastery							
Geophysicists	M	K	K	A	A	A	K
Petrophysicists	K	M	K	K	A	A	K
Geologists	A	K	M	K	A	A	K
Reservoir Engineers	A	K	K	M	K	A	K
Production Engineers	A	K	A	K	M	K	K
Drilling Engineers	A	A	K	K	K	M	K
Commercial	A	A	A	K	A	A	M

Training programme designed to support individual career paths.

Path A shows an example trajectory for a technical specialist in geophysics;

Path B is an example trajectory for a generalist pursuing a team leader/managerial role



With a capability framework for staff defined, each individual can then map out a personal learning and development path to support their chosen career.

disciplines leads to the development of broad skills rather than depth in one subject area. This typically suits a career progression to more managerial or team leader roles (B, above).

For some, a linear path through a technical discipline is the ideal progression and an individual moves through introductory to advanced level training in their chosen subject, gaining technical depth. In this case technical excellence is the ultimate aim (A, above).

Whatever the chosen path, the capability framework and the associated training programme provide a supporting backdrop for robust and fulfilling skills development.

For others, a non-linear path through a mixture of technical and commercial

Mapping out pathways for alternative in-country careers.



Training Provision

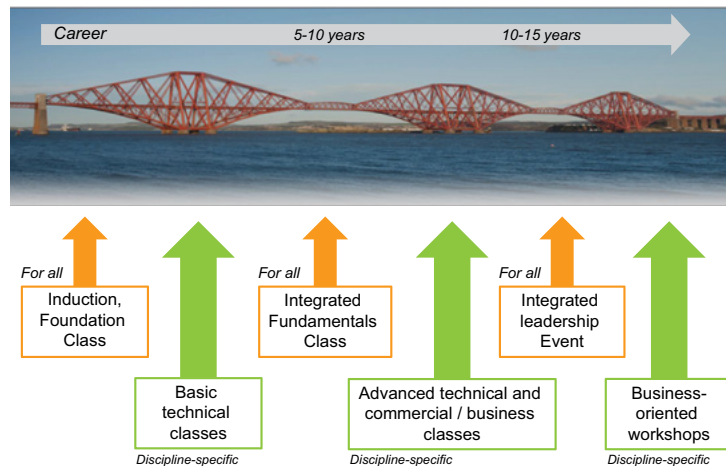
Breadth and depth

TRACS Training distinguishes two types of training event:

- Integrated events, where all disciplines learn together - the aim is to foster good interdisciplinary working and support technical breadth
- Specific technical and commercial training – providing depth in relevant subject areas



Integrated courses for breadth...



Breadth

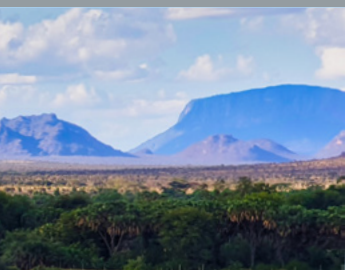
Integration events are milestones within a professional career programme, moments when all disciplines come together to learn together. They also mark points at which individuals develop from managing themselves to managing teams to ultimately managing the business.

Examples of integration events are introductory 'on-boarding' courses for new

recruits, and subsequent technical events designed to consolidate cross-discipline technical understanding after a few years' work experience (one example below). Later on in a career the integration event is typically a preparation for moving into managerial roles – team leader mastery - and will cover topics focussing on the broader business environment.

	Day 1	Day 2	Day 3	Day 4	Day 5
WEEK 1	Welcome	Drive to field location	4 Mapping the container	6 Reservoir properties	11 Well performance
	Group introductions	1 Case study introduction	5 Reservoir heterogeneity	11 Rock properties from logs	18 TPC/IPR, rate pt.1
	HLD welcome and intro lunch	2 Seismic	4 Flow in the reservoir pt.2	12 Data and scale	12 Well testing
	e-learning report back six teams present	lunch	6 Displacement (heterogeneous): Time to water breakthrough	7 Fracture characterisation	19 Well test analysis, rate pt. 2
1	e-learning feedback course structure plan for the two weeks	1 Uppe reservoir characterisation	7 Top structure mapping	13 Fault architecture and perm	lunch
		2 Seismic response	5 Fluid pressure & contacts	8 Fractures	
			8 Pressure/depth from MDT	14 Fracture volume	
		3 Flow in the reservoir pt.1	9 Ballpark volumes	9 Capillary pressure	13 Depletion
		3 Displacement (homogeneous): Time to water breakthrough	10 Resource (HBGRV)	15 Saturation-height	20 Material balance & depletion profile
				10 Oil fluid properties	
				16 Oil PVT	
				17 Resource (fluid in-place)	
WEEK 2	Day 6	Day 7	Day 8	Day 9	Day 10
	14 Displacement	19 CCA & SCAL	23 Reservoir model design	Mature producing field	31 EOR
	15 Field development	20 Gas fluid properties	33 Model resolution and type	38 Production problems	44 Forecasting the future
	21 Madmar Waterflood profile	27 Gas PVT	24 Forecast uncertainty	28 Well interventions	Case study storyboard
	16 Horizontal wells	28 Case study gas volumes	34 Scenario framing	39 Salakh production solutions	Talking Heads feedback
	22 Recovery	21 Gas field forecasting	25 Reserves reporting	29 NPV, EMV & VOI	
	23 Well placement	29 P/Z	35 Case study reserves	40 Decision tree well intervention	32 Case study outro
	17 Elements & architect	lunch	lunch	lunch	lunch
	24 Lower reservoir characterisation	30 Gas well deliverability	26 Completion design	Case study 5 years on	
	25 Depositional environments	31 Gas profile	36 Completion design options	41 5plus review	
	18 Deptn. environments	Storyboard intro	27 Flow assurance	42 Uncertainty review	
	26 Properties & diagenesis	22 The petroleum system	37 Scale, wax & hydrates	30 Surveillance incl 4D	
		32 Regional charge model		43 Surveillance plan	

An example of an integration event: a two week "Technical E&P Fundamentals" course designed for staff with 3 - 10 years industry experience.



Depth

Between the milestone integration events, specialised technical and commercial courses can be programmed with individuals selecting courses according to their chosen career paths.

In early career years these focus on developing personal technical depth in an individual's chosen discipline.

They are succeeded by courses which either support deeper technical specialism or which provide technical or commercial broadening. In later career years, courses are more typically business focussed, supporting development towards management roles

Year 1

Block 1 (10 days)		
#8	Integrated SS&W Fundamentals	10 days

Block 2 (7 days)		
#2	Foundations of petrophysics	2 days
#3	Well log interpretation	3 days
#6	Horizontal MWD/LWD log analysis and interpretation	2 days

Block 3 (10 days)		
#1	Development geology	5 days
#14	Basic reservoir engineering	5 days

Block 4 (8 days)		
#7	Coring and core analysis	3 days
#4	Horizontal well drilling short course	3 days
#5	Sidetracking window milling short course	2 days

Year 2

Block 5 (10 days)		
#10	SS&W Principles and Practices	10 days

Block 6 (8 days)		
#11	Well Production Awareness	3 days
#13	Well performance	5 days

Block 7 (10 days)		
#9	Fundamentals of reservoir and wells surveillance	5 days
#12	Well management fundamentals	5 days

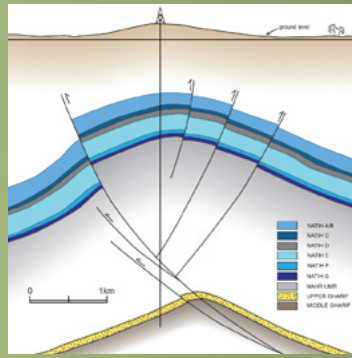
	Single tutor event
	Dual tutor event

An example of a 14-course programme designed for a national oil company, including integration events (blue) and selected specialist technical courses for petroleum and well engineering staff (green).

The **integrated courses** are generally most effective when tailored to the local environment. TRACS Training supports the building of these events in liaison with technical authorities in the local organisation, who are best placed to understand specific local needs.

The **specialist courses** tend to be more generic in nature, particularly the basic skills development courses, and these can be supported by a number of providers, including TRACS, according to their technical specialisms. Contributions from international operating companies in their own areas of technical excellence can be integrated into a broader programme in this way.

*...specialist courses
for depth.*



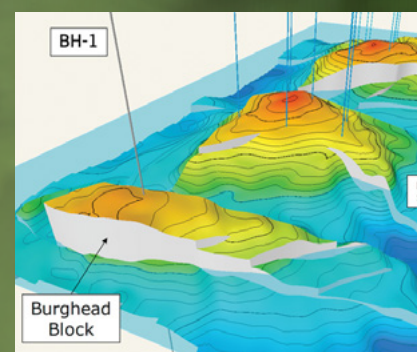
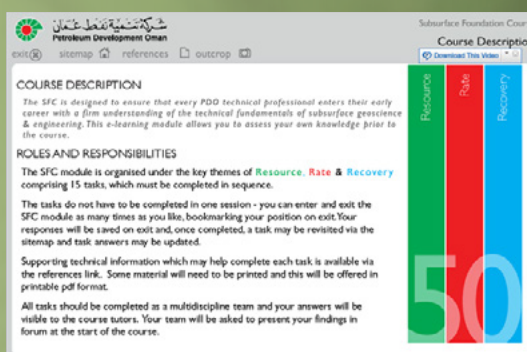
Blended Learning

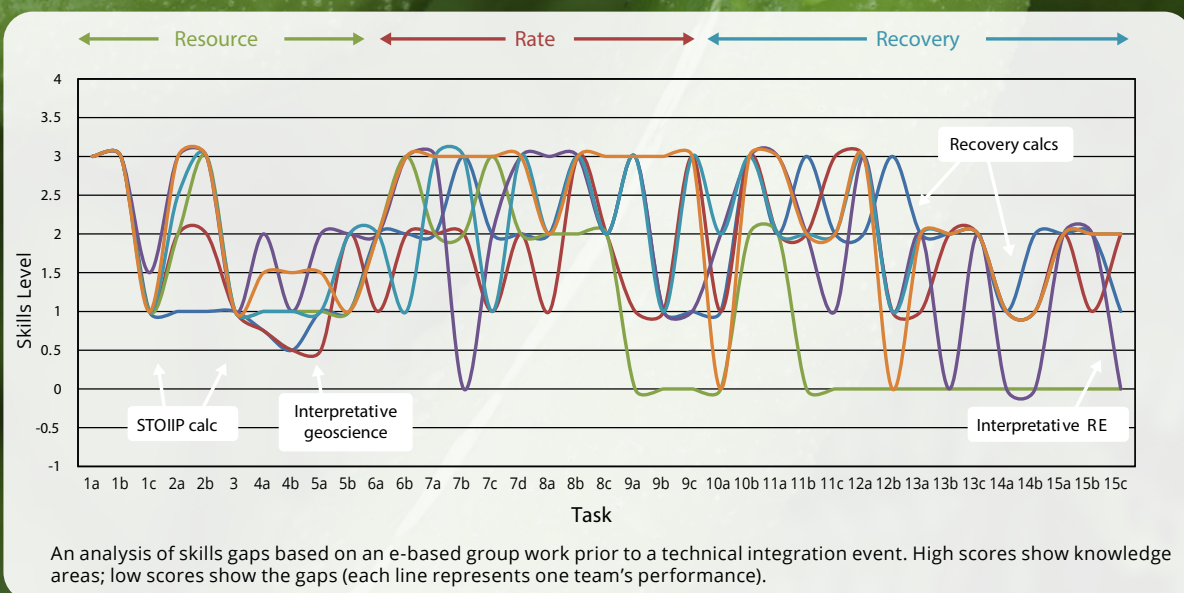
TRACS Training provides a range of e-Resources to support face-to-face course delivery.

Blended learning is an effective approach that combines various development methods, extending beyond traditional e-Learning packages. It utilises experiential learning principles, outdoor activities, and a range of e-Products, which can be integrated as optional components in TRACS Training events.

Our offerings include conventional e-Learning modules, quiz-style formats, and advanced packages that encourage team collaboration and technical study, supplemented by digital materials like e-books and e-tools.

We efficiently create e-Learning modules compatible with clients' existing learning portals. All modules are database-linked for results collection, helping identify knowledge gaps before courses and allowing us to tailor the focus accordingly. If outdoor access is limited, we can enhance the modules with virtual field graphics.





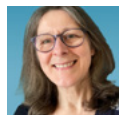
TRACS Training

Who we are

TRACS Training was founded in 1992 as part of TRACS International specifically to offer tailored training events to the E&P business. Rather than running open course programmes, courses are designed individually for clients, tailored to their needs and delivered at a location of their choosing, usually in-country.

The tutor pool is made up of over 20 individuals who are actively engaged in E&P consultancy work worldwide. In this way course material is kept up-to-date and relevant to contemporary skills needs in the industry. The tutor group includes published authors, SPE and EAGE Distinguished Lecturers and technical leaders in their respective disciplines. Most have worked with major oil companies, some in senior technical and management roles.

Since 1992 courses covering the full spectrum of E&P activities from the reservoir to the point of sale have been delivered to clients on every continent (except Antarctica)



TRACS clients and capability

Capability frameworks

TRACS Training consultants have been involved in building capability frameworks for BP (UK commercial), Shell (SE Asia and central training centre) and Amerada Hess.

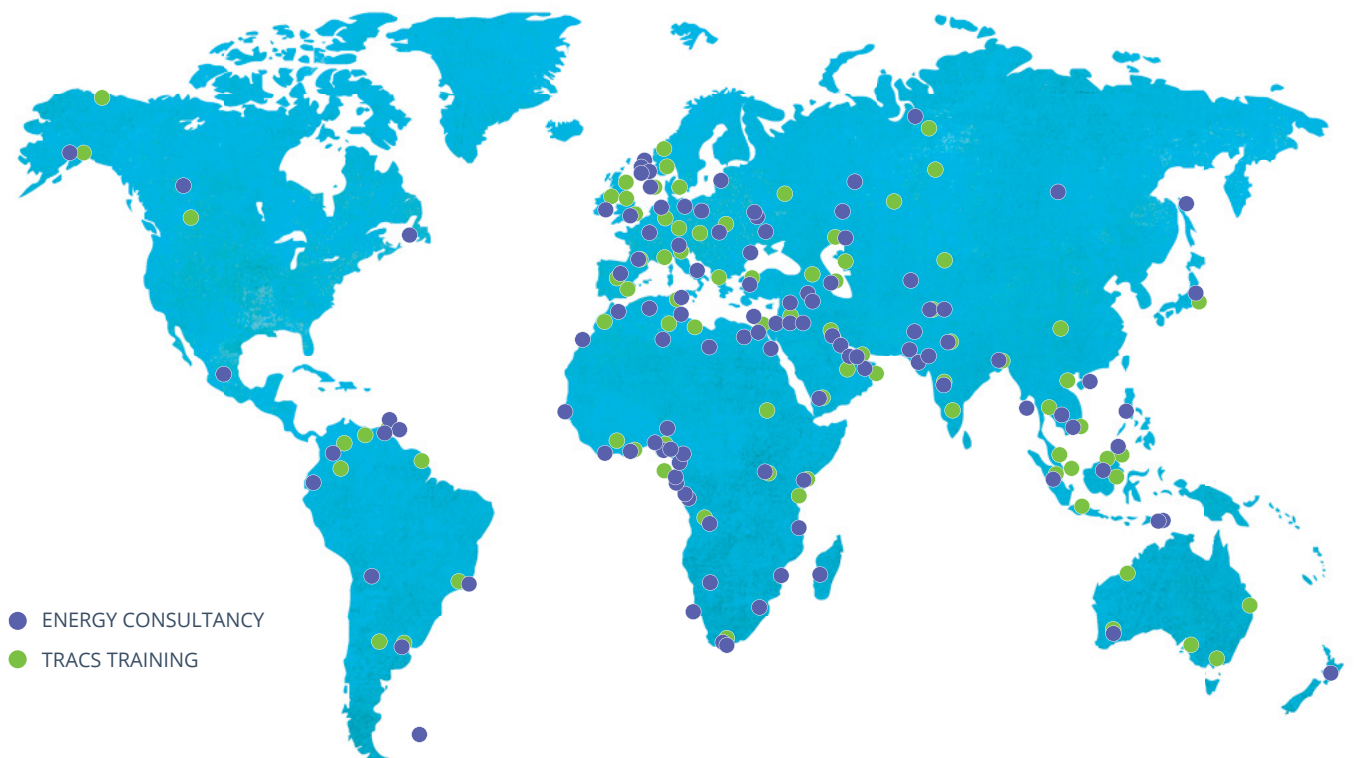
Integrated events

TRACS Training specialises in designed and running integrated events, especially for early career, 'on-boarding' groups, notably for Petronas (Malaysia), BP (globally), Shell (Oman & Iran), ADNOC (Abu Dhabi), OMV (globally) and Wintershall (globally). We have also run mid-career technical integration events (e.g. BP, Shell and YPF Argentina) and later career events for senior management (e.g. BP, Hess).

Specialist events

We run a selection of specialist courses in areas matching the expertise of our tutor pool. These range from exploration, through the petroleum and well engineering disciplines to surface facilities design and commercial evaluation. We have over 60 courses currently available 'off the shelf', with an offer to develop more on request.

11





TRACS International Limited
8 Rubislaw Terrace, Aberdeen AB10 1XE
+44 1224 024074
energy@tracs.com
training@tracs.com
tracs.com

