

Course catalogue 2011

Oil, Gas and Energy

DNV ACADEMY

Training with impact – knowledge for use

WELCOME TO THE DNV ACADEMY TRAINING COURSE OFFER 2011

DNV Academy creates enticing, engaging and fun learning experiences which inspire improvement, development and change; Fundamental Insights – Innovation and Results. One of the ways we do this is to enable you to tap into the wealth of knowledge which DNV has acquired by working with and developing thousands of excellent companies all around the world. Through this you will be learning from others experiences, mistakes and successes, best practices and state of the art knowledge.

Today innovations are carried out both in laboratories by technicians, and by continuously adopting business models to even better meet customer needs. Bright ideas are not only technology or product driven, and business performance is increasingly dependent on the people it engages. To cope with change, to create true business value for a customer and innovating new modes of operating demands a new set of skills from all of us. Competence in areas of communication or behavioural and team management capability are just as important as well as technical skills, the real art is in the combination of them all. The DNV Academy offers training in all these areas.

Training with impact – knowledge for use

Learning quicker – remember more through knowledge and insight delivered in more effective ways than with traditional training. This is achieved through using real-life cases involving the trainees via learning by doing.

The knowledge acquired is current and applicable based on real-life experiences and best-practices gathered through assessments and cooperation with excellent companies.

Global knowledge in local context

DNV Academy is present in over 50 countries. We work with international customers designing and delivering training programs globally but within a specific cultural context which only a local trainer can bring.

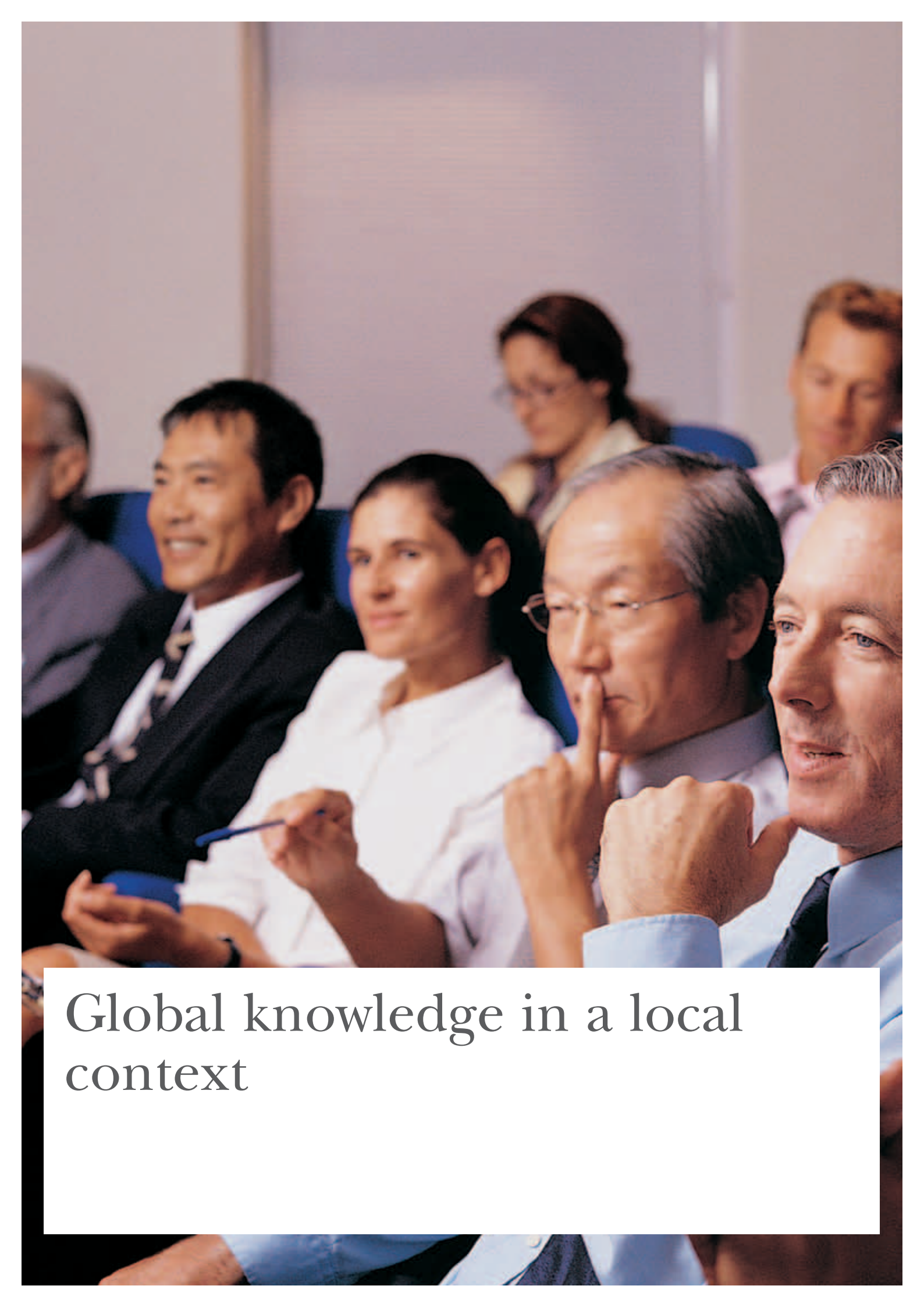
By building our services on the same training methodology and pedagogical concepts, we are able to deliver a consistent service globally albeit with a local flavour. In this way we help customers to put global governance into practice spreading knowledge and company specific cultures to local trainees around the world.

DNV Academy Technical Training Programs

DNV provides world-class expertise in technology, operations, management and risk. Even more importantly we combine our know-how into a professional service concept designed to safeguard and improve the performance on your business.

This brochure presents the current portfolio training for pipeline, subsea, riser and materials technology. The courses are designed and delivered by managers and lead engineers responsible for the relevant Standards and Recommended Practices. Both generic and specialist courses are offered to suit all levels of experience.

We hope you will find this information useful and look forward to meeting you on one of our courses in the near future. For the latest overview of courses, dates and online booking, please refer to the links on the back page.



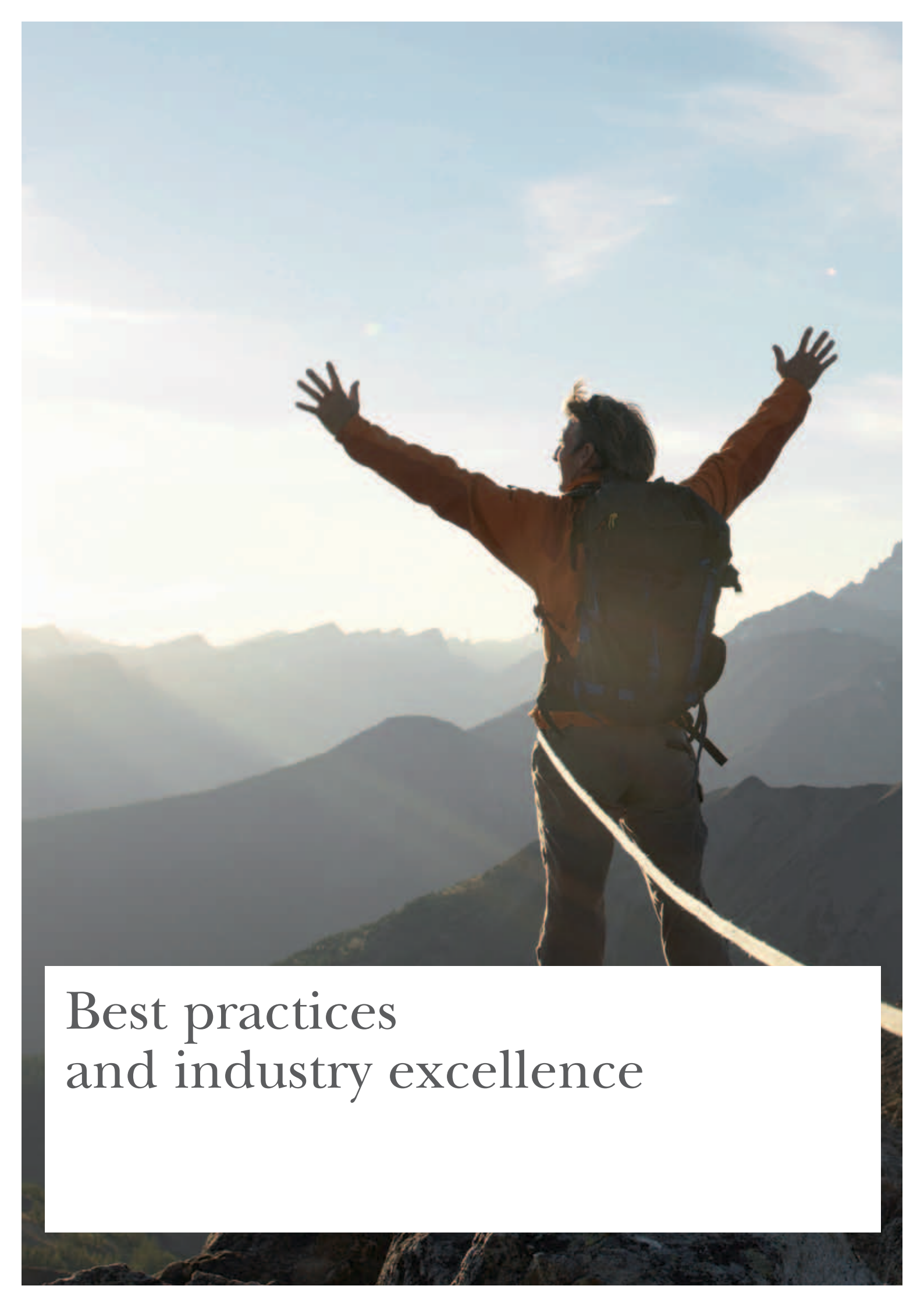
Global knowledge in a local context



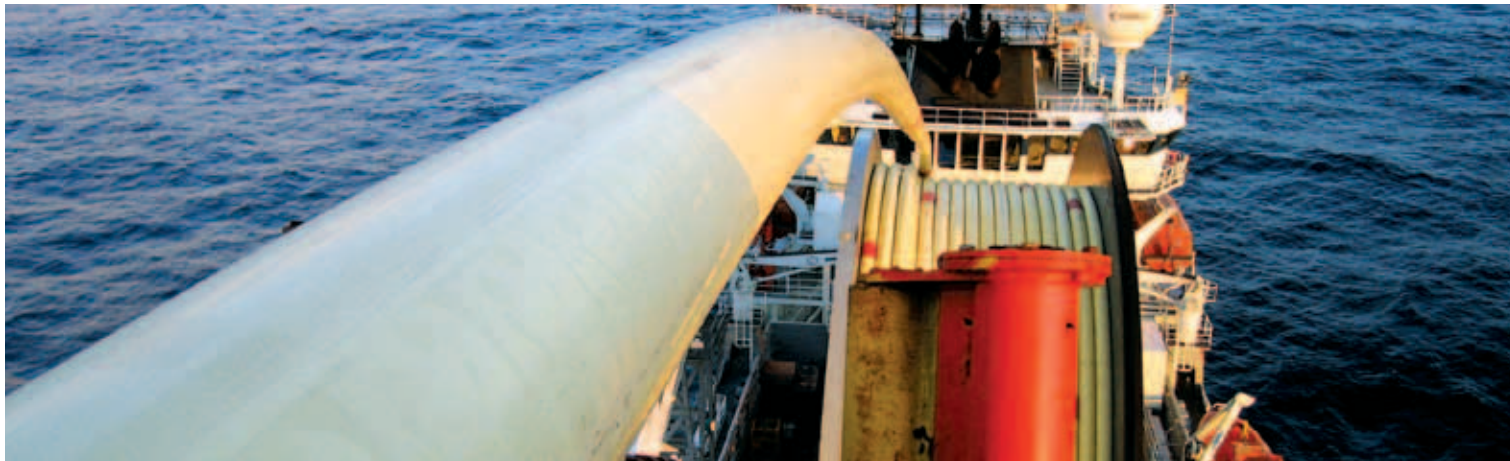
Managing risk through people

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Best practices
and industry excellence



OFFSHORE PIPELINE OVERVIEW 2 DAYS

This course will give a basic understanding of pipelines in general. The participants will get an overview of pipeline applications, ranging from transport of un-processed hydrocarbons from subsea wells to platforms, via trunk lines for oil/gas, and further to distribution networks that is bringing gas to consumers and industrial users. The course starts with a webprimer which is developed in close cooperation with a major oil Company.

Objective

- Give an overview of pipeline technology for all phases
- Provide a technical basis for all pipeline disciplines
- Form a common basis for the Pipeline Design course

Target Group

Professionals that are involved in pipelines activities and engineers that want to get a good foundation for Pipeline Design and other specialist courses.

Price: NOK 15.000,-

OFFSHORE PIPELINE DESIGN 3 DAYS

Modern pipeline design enables the engineer to fully optimise and tailor each pipeline to specific needs. The DNV-OS-F101 standard forms a basis for the design activities, and the pipeline standard with its complete design width is covered in this course. Use of the supporting DNV-OS-F101 design software is also part of the training. Associated Recommended Practices and the upcoming revision of the DNV-OS-F101 is also addressed.

Objective

- Understand the design philosophy of the DNV-OS-F101 pipeline standard
- Perform simple wall thickness design
- Gain an overview of relevant failure modes for pipeline design

Target Group

Design engineers and engineers working with design related subjects, who need a more detailed knowledge of standard pipeline design and its tasks.

Price: NOK 22.000,-



OFFSHORE PIPELINE GLOBAL BUCKLING 2 DAYS

The Recommended Practice, DNV-RP-F110, has been developed in a Joint Industry Project involving leading oil Companies and consultants. The course will give an introduction to the design philosophy of the DNV-RP-F110, how it complements to the DNV-OS-F101, and gives specific requirements for global buckling scenarios of HT/HP pipelines.

Objective

Understand how to design new and assess existing pipelines, with respect to global buckling of HP/HT

- Pipeline exposed on even seabed
- Pipeline exposed on un-even seabed
- Buried/covered pipelines

Target Group

Pipeline Engineers that will perform design activities, or want insight into design challenges of HP/HT pipelines.

Price: NOK 15.000,-

OFFSHORE PIPELINE FREE SPAN 2 DAYS

The DNV-RP-F105 was updated in 2006. This update considers experiments and learning from the Ormen Lange project, as well as experience from use of the earlier versions. The course gives an introduction to the design philosophy of the updated DNV-RP-F105, and presents an approach that enables a more optimized design that will reduce the need for seabed intervention.

Objective

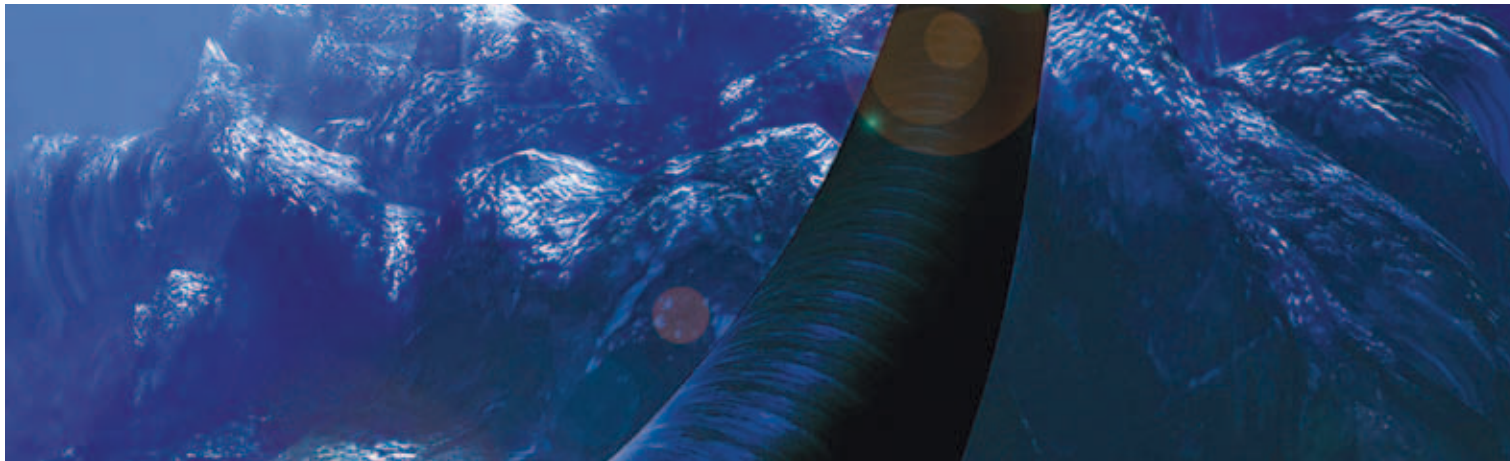
Give a basic understanding on

- How to design new and assess existing free spanning pipelines
- Perform design considering multi-mode span response
- How to calculate and design for long free spans

Target Group

Engineers that will perform design and reassessment of free spanning pipelines, want insight into free spans, and span intervention.

Price: NOK 15.000,-



ON-BOTTOM STABILITY 1 DAY ON REQUEST

The recommended practice DNV-RP-F109 considers various factors regarding hydrodynamic environment and seabed conditions affecting pipeline stability and provides design criteria that applies in order to ensure lateral and vertical stability. The course gives a thorough introduction to this recommended practice and how to perform on-bottom stability design of submarine pipelines.

Objective

- Increased understanding of aspects related to On-Bottom Stability
- Be able to perform On-Bottom Stability design

Target Group

Engineers that will perform on-bottom stability design of submarine pipelines.

Price: NOK 8.000,-

TRAWLING INTERFERENCE 1 DAY ON REQUEST

The DNV-RP-F111 covers recommended practices for trawl interference loads, as part of pipeline integrity. With this course we focus on subjects such as trawling aspects, safety format, trawl impact, pull-over, hooking, coating impact and mitigation, and how these are reflected in DNV standards.

Objective

- Cover the complete design methodology of the DNV-RP-F111
- Knowledge of design philosophy of the DNV-OS-F101 pipeline standard and how it applies
- Gain insight in how to analyse pipeline integrity with respect to trawl interference loads, in accordance with DNV-RP-F111.

Target Group

Pipeline Engineers that will perform design of pipelines with respect to trawl interference.

Price: NOK 8.000,-



CORRODED PIPELINES

1 DAY
AVAILABLE ON REQUEST

Based on DNV RP-F101, this course is introducing strength assessment of corroded pipelines, including uncertainties associated with in-line inspection results. Different corrosion mechanisms and effect of future corrosion development will also be covered.

Objective

- Gain insight to strength assessment of corrosion defects in pipelines
- Be able to perform strength assessment in accordance with DNV-RP-F101 “Corroded Pipelines”
- Understand corrosion mechanisms and corrosion development
- Gain awareness of inspection uncertainties

Target Group

Engineers evaluating pipelines in operation. Pipeline engineers working with inspection planning of pipelines.

Price: NOK 8.000,-

PIPELINE INTEGRITY MANAGEMENT (PIM) OFFSHORE

2 DAYS

This course provides an introduction to pipeline integrity management founded on the upcoming DNV RP-F116 Submarine Pipeline System Integrity Management. The course will go through the combined process of threat identification, risk assessment, planning, monitoring, inspection, maintenance etc. necessary to maintain pipeline integrity. The participants will familiarize with the concept of risk assessment and main damage causes and mechanisms for pipelines.

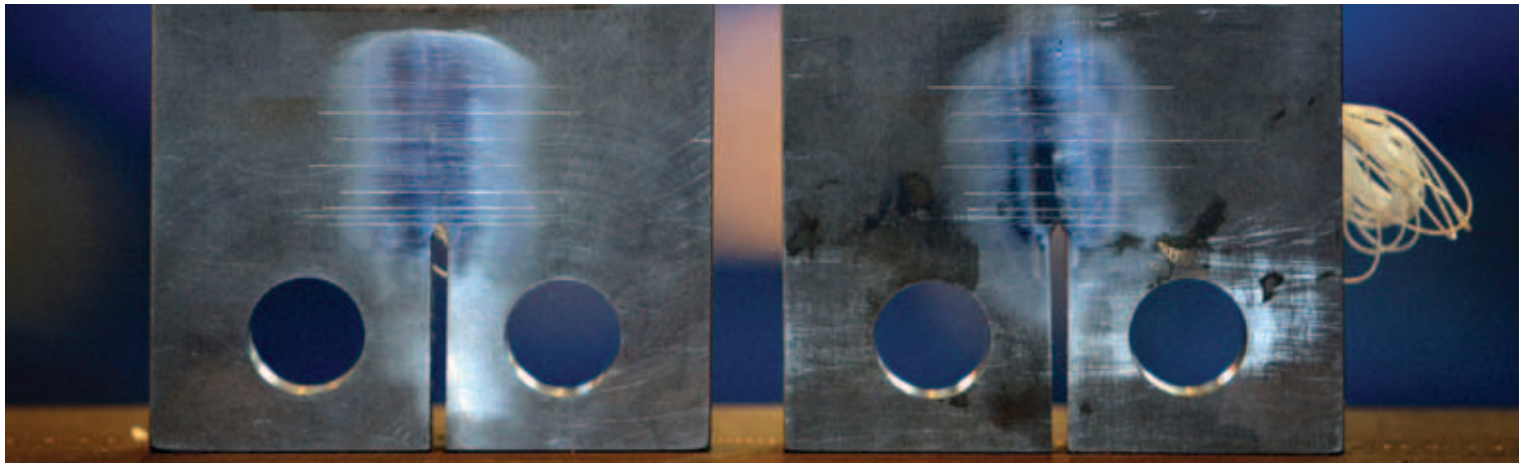
Objective

- Know how to perform an integrity assessment with respect to pipelines
- Be familiar with pipeline inspection methods
- Be aware of the pipeline integrity management working process and requirements of software tools

Target Group

Management and engineers evaluating pipelines in operation, and pipeline engineers working with pipeline condition assessment and inspection planning.

Price: NOK 15.000,-



HISC – DESIGN AND MATERIAL CONSIDERATIONS COURSE AVAILABLE ON REQUEST 1 DAY

This HISC (Hydrogen induced stress cracking) course is based on DNV-RP-F112 'Design of Duplex Stainless Steel Subsea Equipment Exposed to Cathodic Protection'.

Course description

A large research and testing effort over the past five years has clarified the limitations of duplex materials with regards to subsea use. This knowledge has been used as the basis for the new DNV Recommended Practice DNV-RP-F112, which provides design guidelines. The RP presents HISC as a separate failure mode, which should be analysed for duplex components used subsea. The design requirements in the RP include stress and strain limits, as well as a number of other factors.

Learning objective

- Obtain a basic understanding of the risk factors for HISC
- Obtain a basic understanding of the HISC failure mechanisms
- Obtain an understanding of the design requirements in DNV-RPF-112
- Go through the design of a simple piping system and a simple component design using FE following the requirements in DNV-RP-F112.

Target group

- Subsea design engineers, involved with duplex components
- Materials engineers, who want to understand the HISC failure mode
- Project engineers involved in manufacturing and fabrication.

Price: NOK 8.000,-

MATERIALS TECHNOLOGY FOR OFFSHORE OIL AND GAS INSTALLATIONS 2 DAYS

This introductory course discusses most common metallic materials for offshore structures, components and pipelines, including manufacturing methods and fabrication activities used. The course also endeavours to give a more in depth understanding of selected topics like basic metallurgy, welding, hydrogen induced stress-cracking (HISC), pipeline materials, and failure investigation.

Objective

- Obtain basic competence on the most common offshore metallic materials and their fabrication methods
- Improve understanding of the different material issues typically encountered in an offshore development project

Target group

- Materials engineers with little or no experience
- Engineers working with manufacturing and fabrication follow-up
- Design engineers with special interest in materials

Price: NOK 15.000,-



INTRODUCTION TO WELDING FOR OFFSHORE APPLICATIONS 1 DAY

Personnel who have a role related to welding of offshore oil and gas pipelines and production systems would benefit from taking this course. The training will give an improved understanding of different material issues related to welding in the offshore industry.

General principles for welding, welding methods, welding metallurgy, welding procedure specifications and qualifications, pipeline welding, welding of subsea production systems.

Objective

Upon completion participants will:

- be able to identify the different welding methods and associated defects
- have a higher knowledge of WPS and the corresponding WPQR
- have increased understanding of how welding affects the components integrity
- know special focus areas when dealing with welding of steels and stainless steels

Target Group

- Design engineers with special interest in welding
- Materials engineers with little or no experience
- Engineers working with manufacturing and fabrication follow-up

Price: NOK 8.000,-

QUALIFICATION OF NEW TECHNOLOGY 1 DAY

This course will give the participants an overview and background of the DNV RP A203, and the qualification work process presented therein. The procedure can be applied for components, equipment and systems, which can be defined as new technology, in offshore hydrocarbon exploration and production. Application areas range from SURF (Subsea, Umbilicals, Risers, Flowlines) to LNG systems and terminals, Oil sands to Downhole systems, and can be applied to a wide range of frontier applications.

Course Objectives

- Help participants understand what Technology Qualification is, and when it is needed;
- Give the participants an overview and background for the principles of the Technology Qualification Work Process as described in the DNV RP A203;
- Familiarize the participants with the requirements to Technology Qualification and its documentation;
- Familiarize the participant with carrying out a Failure Mode Identification and Risk Ranking session through group work session

Target Group

Professionals who are involved in development and qualification of technology, and engineers who want to get a good understanding of a systematic process of technology qualification and its documentation. Project managers who are following up technology qualification projects, and professionals in charge of selecting and acquiring new technology. Engineers and managers from Subsea Systems, LNG systems, Downhole, SURF projects, etc

Price: NOK 8.000,-



INTRODUCTION TO SUBSEA PRODUCTION SYSTEMS 3 DAYS

This introductory course will let the participants familiarise themselves with the building blocks that form a subsea production system. The course explains the physics from a practical system perspective.

Objective

- Explain the hierarchy of codes, rules and regulations
- Identify common specification breaks
- See specific Subsea products in connection with a complete subsea development
- Provide an overall picture and general knowledge of subsea development and production systems

Target Group

Professionals who are involved in subsea activities and engineers who want to get a good foundation for XT Design, Subsea Separator Design and other Specialist Courses.

Price: NOK 22.000,-

XT DESIGN 3 DAYS AVAILABLE ON REQUEST

This course will give the participants a 'Jump Start' in XT technology. Participation in this course will increase their competence with at least two years of 'on the job training'.

This course will give an understanding of safe execution of a XT development project.

Objective

- The participants will be introduced to key elements of applied technology for XT design
- The elements are a selection of important aspects of XT design

Target Group

X-mas tree product engineers and professionals involved in XT design activities.

Price: NOK 22.000,-



ENVIRONMENTAL CONDITIONS AND LOADS 2 DAYS

This course provides an introduction to DNV-RP-C205 and will let the participants familiarize themselves with the necessary steps in the load assessment of marine structures. The course covers wind, wave and current conditions and provides an overview of state-of-the-art methods for deriving corresponding loads on fixed and floating offshore structures.

Objective

Upon completion, participants will:

- Know where to find relevant recommendations in RP-C205 on environmental conditions and loads
- Know how to use the recommendations by simple application examples

Target group

All professionals that are involved in design and evaluation of marine structures.

Price: NOK 15.000,-

HAZOP METHOD AND LEADER COURSE 2 DAYS

HAZOP (hazard and operability) studies have become more and more recognised as a good way of revealing and managing the risks of different systems and procedures. In this course DNV tutors combine formal presentations with practical workshops, in which delegates will gain hands-on experience from participating in a HAZOP session.

Objective

Provide the knowledge to lead efficient HAZOP studies.

Some of the topics covered are:

- HAZOP method for continuous processes
- HAZOP method for procedures
- Preparations for HAZOP studies
- The role of the HAZOP leader
- HAZOP reporting and follow up
- Comparison of HAZOP with other analysis techniques – when to use what?

Target Group

The course will be of use to a wide range of disciplines whether in design, development, production, maintenance or a safety/environmental role. People in all these disciplines regularly lead, or are involved in, HAZOP studies. The technique is finding increasingly diverse applications in a wide range of industries.

Price: NOK 15.000,-



RISER & UMBILICALS: TECHNOLOGY OVERVIEW 1 DAY

Objective

The course will give the participants a broad overview of the essential elements involved in riser and umbilical design. The topics covered include:

- Introduction to riser & umbilical technology
- System overview – compliant riser systems
- System overview – top tensioned riser systems
- System overview – hybrid riser systems
- Flexible pipe technology
- Umbilical technology
- Drilling and C/WO riser technology

Target Group

All professionals who are involved in riser and umbilical activities, and engineers who want to get a good foundation in riser and umbilical design.

General Information

Basic knowledge of mechanics and statistics required to attend this course.

Price: NOK 8.000,-

RISER & UMBILICALS: ANALYSIS MODULE 1 – GLOBAL ANALYSIS 1 DAY

Objective

The course will give an overview of the characteristic response properties of risers and umbilicals including static and dynamic behaviour with emphasis on nonlinearities.

Topics covered include:

- Riser systems – short recap
- Environmental loads and load conditions
- Static finite element analysis
- Dynamic time domain analysis
- Wave modelling in riser analysis
- Hydrodynamic loading
- Floater motions

Target Group

All professionals who are involved in riser and umbilical activities, and engineers who want to get a good foundation in riser and umbilical design.

General Information

Basic knowledge of mechanics and statistics required to attend this course.

Riser & Umbilicals – Technology Overview course is recommended prior to attending this course.

Price: NOK 8.000,-



DESIGN OF FREE FALL LIFEBOATS 3 DAYS

This course is intended for all personnel involved in design of new free fall lifeboats, either designers, operators, authorities or engineering/consultant personnel.

Objective

Upon completion of this course the participants will have obtained an overview of the development of the free fall lifeboat technology, as well as the fundamentals of lifeboat state-of-the art design. The course further covers the overall safety philosophy and design principles for free fall lifeboats.

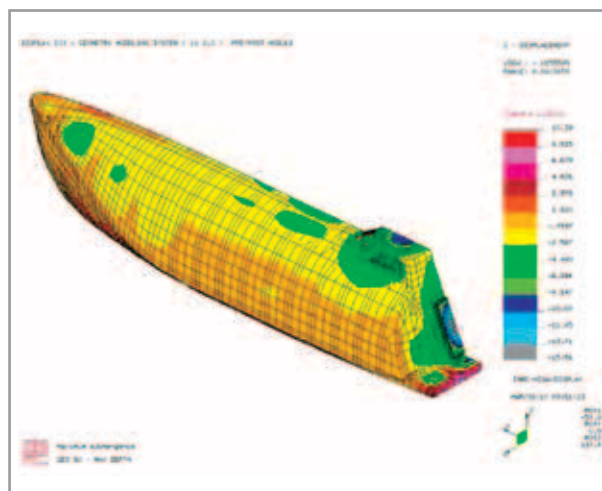
The main steps through the design phase of the Offshore Standard are covered. These steps/items include:

- Basic dynamics of free fall lifeboats
- Metocean conditions
- Hydrodynamic loads and structural response
- Materials for free fall lifeboats
- Basic statistics and probability distributions
- Safety philosophy and design principles
- Characteristic loads
- Structural analysis and design
- Model and full scale testing
- Operational requirements
- Requirements to occupant safety

Target Group

Professionals that are involved in free fall lifeboat design and engineers that want to get a good foundation for understanding the technical philosophy behind the new Offshore Standard for free fall lifeboats.

Price: NOK 22.000,-



Top photo:

Umoe Schat Harding FF1200 resurfacing after drop. Courtesy Umoe Schat Harding Equipment AS

Illustration:

Analysis of Norsafe GES50 Mk. II. Courtesy Norsafe AS



BASIC STABILITY FOR DRILLING RIGS 1 DAY

How do people handle stability issues to help reduce incidents/accidents related to stability? How can you learn to make your working day safer by following simple rules of thumb? This course will answer these questions and hence make you better equipped to make the right decisions in case of incidents/accidents.

Objective

Upon completion of this course, the participants will have developed knowledge of the MODU-code, learnt to diagnose different stability safety situations, and apply the most effective corrective action. Several case demonstrations from real-life situations will also make the participants better prepared to react in the safest way.

The participants will be given an overview of all the basic aspects related to stability for a rig. Main topics:

- Stability, rules and regulations
- Stability criteria
- Watertight integrity (external and internal)
- Review of typical content of an Operating Manual
- Maximum Allowable KG limit curves
- Ballasting
- Review of some accidents
- Corrective actions if a damage occurs.

Learning objective

Target Group

The course is intended for personnel with responsibilities related to stability for semi-submersible drilling rigs in operation.

Price: NOK 8.000,-



Useful Information

REGISTRATION

Travel information

The Oslo Airport Gardermoen is an estimated 60 minutes commute to the Veritas Centre at Høvik. Take the train to Sandvika, then taxi to the Veritas Centre or a hotel in Sandvika.

If your hotel is located in Oslo, take the train to Oslo, then taxi to your hotel. <http://www.flytoget.no/eng>

Hotel Information

Course participants are responsible for arranging and paying for their own hotel accommodations. For further information you may use one of the hotel links below:

Thon Hotel Oslofjord, Sandvika:
<http://www.thonhotels.com/oslofjord>

The Thon Hotel Oslofjord provides a hotel shuttle to the Veritas Centre. Please inquire with the receptionist at check-in. In order to get a discount, use reference code "TH109002", if you book online. If you book by phone or fax, use "DNV".

Scandic Hotel, Høvik:
<http://www.scandichotels.com/en/Hotels/Countries/Norway/Oslo/Hotels/Scandic-Hovik/>

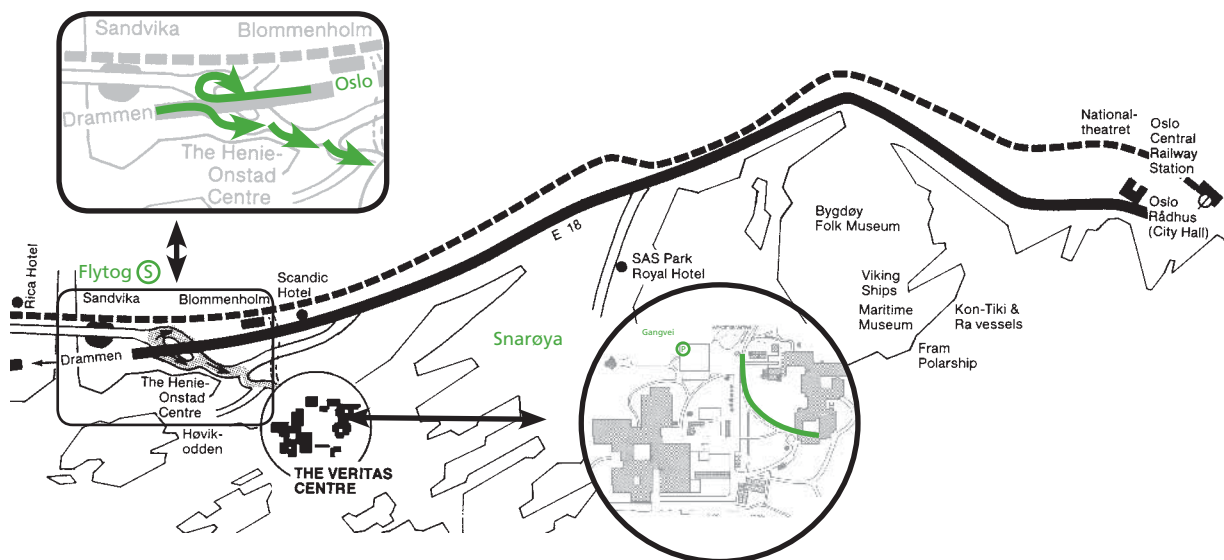
Scandic Hotel Høvik is within a 10 minute walk to the Veritas Centre. Ask at hotel reception for directions. In order to get a discount, use reference code "D000003129".

Scandic Hotel KNA, Oslo:
<http://www.scandichotels.com/en/Hotels/Countries/Norway/Oslo/Hotels/Scandic-KNA/>

Scandic Hotel KNA is located in Oslo. In order to get a discount, use reference code "D000003129".

Tourist Information, Oslo
<http://www.visitoslo.com/en/>

The official tourism site for Oslo. Everything you wanted to know about what to do in and around Oslo is here. History. How to get around. Dining. Museums. Nightlife.





Managing risk at every step
with a commitment
to sustainable development

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Based on our world-class expertise in risk-management we provide you with the knowledge, the insights and the expertise we derive from our daily practice. Through DNV Academy you get highly effective, interactive training that helps you apply new knowledge directly to your own working environment. The goal is always to help you effectively improve your business performance.

Latest overview of courses, dates and online booking:
Course information – www.dnv.com/services/training/
Booking – events.dnv.com

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