| 2 | We know how to turn training into competency |
| 3 | Training and Competency Development Programs |
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| 5 | Electrical Safety Audits | Hazard and Operability (HAZOP) |
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The global learning center for sustainably improving process safety competency

Excellence in Process Safety performance requires the right people, with the right skills, implementing appropriately designed Process Safety programs, motivated by the right organisational culture, in the right way.

DEKRA Process Safety Academy introduces, embeds and maintains competency in Process Safety in your organisation. With more than 30 years of expertise, our highly qualified team of learning experts, senior practitioners and scientists make us the global experts in process safety who partner with you to identify and meet all your learning requirements.

<table>
<thead>
<tr>
<th>Multi-level audience</th>
<th>Operators, Technicians, Supervisors, Engineers, Managers and Contractors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competence levels</td>
<td>Awareness, Basic Application, Proficiency, Expert</td>
</tr>
<tr>
<td>Multiple languages</td>
<td>English, German, Spanish, French, Italian, Chinese, Portuguese</td>
</tr>
<tr>
<td>Our training programmes are</td>
<td>Effective, Impactful, Globally Consistent, Sustainable</td>
</tr>
<tr>
<td>Our delivery methods</td>
<td>In-house, Public Courses, eLearning, Competence Development Programs</td>
</tr>
<tr>
<td>Our trainers</td>
<td>Highly experienced Process Safety practitioners in industry</td>
</tr>
</tbody>
</table>

Our Competence Development Programs

We know how to turn training into competency

Training alone does not drive competency. Humans tend to forget very quickly and can only retain a small percentage of knowledge after some weeks have passed. Real learning needs experience, support and mentoring, verification and monitoring over time. Our competence development programs are based on the important learning principles:

- **SENSITIZE**
  - Access to videos and theoretical content.
  - Pre-assess your competence and send
  - 2 weeks

- **INTRODUCE**
  - The knowledge is introduced in a classroom, or online (webinar, eLearning)
  - 1-5 days

- **EMBED**
  - Embedded through practical reinforcement, tutoring and learning nuggets
  - 3 weeks

- **MAINTAIN**
  - Maintained through refresher learning and follow-ups.
  - 2-3 months

All to sustain the knowledge over time
### 1. LEGISLATION AND REGULATIONS
- SEVESO / COMAH / DSEAR / OSHA / CIP / GHS / Transportation

### 2. UNDERSTANDING HAZARDS
- Gas & Vapor Explosion Hazards
- Dust Explosion Hazards
- Chemical Reaction Hazards & Thermal Stability
- Ignition Sources & Electrostatic Hazards

### 3. HAZARD IDENTIFICATION & RISK ANALYSIS
- HAZOP (Member/Leader)
- Process Hazard Analysis (HAZID, What-If, LOPA, FMEA)
- Quantitative Risk Assessment (QRA)
- Consequence Modelling and Toxic Dispersion

### 4. HAZARD MITIGATION AND MANAGEMENT PROGRAMS
- Functional Safety Management, LOPA & SIL Assessment
- Emergency Relief Systems, Blowdown & Pressure Vessels
- Process Safety Management (PSM)
- Process Safety Metrics & Leading Indicators
- Process Safety Management System Auditing
- Management of Change
- Incident investigation

### 5. WORKING IN HAZARDOUS AREAS
- Understanding Hazards and Working Safely in Hazardous Areas
- Hazardous Area Classification (HAC)
- Design & Selection & Maintenance of Equipment in Hazardous Areas (Advanced)
- Erection & Maintenance in Hazardous Areas
- Inspection & Maintenance in Hazardous Areas

For further discussions on our tailored in-company solutions, e-learning or competency development programs, please call + 91 11 2613 6979 or e-mail us on info-in@dekra.com
Chemical Reaction Hazard

Course Outline

This course will teach attendees how to identify the thermal and chemical reactivity hazards associated with a chemical process and how to select suitable safety measures for protecting the plant against runaway reaction. Attendees will learn how to conduct risk analysis of reactive systems to ensure safety prior to process operations and how to interpret the results of preliminary screening tests through the use of chemical engineering concepts relating to safe plant operation.

The one-day course also covers how to identify significant sources of hazard in existing plants, understanding the latest techniques for assessing risk and measuring and quantifying chemical process hazards in the workplace.

Dust Explosion Hazard

Course Outline

This course will demonstrate the techniques available for both preventing dust explosions and protecting people and facilities from their effects. It employs a systematic approach to dust explosion hazard assessment directed towards obtaining a Basis of Safety for a process.

The course will teach attendees how to analyze various conditions under which dust explosions can occur and how to compare different techniques to prevent dust explosions. Further it will coach attendees on how to apply suitable measures for protection of people and facilities from the effects of an explosion and how to choose methods to estimate dust hazard properties.

The course also covers the role of Codes and Standards in evaluating dust explosion hazard risks.
Electrical Safety Audits

Course Outline

More than 45 per cent of reported fire accidents are traced to electrical problems. It is also true that if no other evidence is forthcoming, the cause of fire is normally attributed to electrical short circuit.

The program on electrical safety audit will teach attendees how to identify potential electrical hazards during the audit which when eliminated or reduced would ensure safety of humans, plant equipment and buildings.

The course will enable the participants to know the Why, When & How of Electrical Safety Audit and will raise the level of competence and electrical safety audit awareness of the participant. The course covers both the theoretical and practical aspects of safety as well as well as statutory and legal requirements of relevant Indian Codes.

Duration: 1 day  
Level: Advanced  
Type: Classroom training  
In company: Contact us  
Open sessions: 15 March, Mumbai  
6 September, Delhi  
Fee per participant (excl. taxes): Rs 14,500

Hazard and Operability (HAZOP)

Course Outline

This two day competency course will help attendees develop the skills & knowledge required for participating & leading a HAZOP. While the first day will cover the theoretical concepts of a HAZOP the second day will consist of conducting a practical HAZOP session.

This program demonstrates how HAZOP is a rigorous, structured approach to identifying operational problems and hazards which can be adapted to a variety of processes and technologies. Since the effectiveness and efficiency of a HAZOP depends on the competence of the leader, this program will help leaders develop the skills necessary to make HAZOP a cost-effective aspect of process development, design, and management in their Organization.

Duration: 2 day  
Level: Advanced  
Type: Classroom training  
In company: Contact us  
Open sessions: 17-18 January, Vadodara  
Fee per participant (excl. taxes): Rs 25,000
Inherently Safer Process Design training provides support needed to ensure the principles of inherent safety are understood and applied to new plant designs and proposed changes to existing plant. By applying the principles of Inherent Safer Design one can make a real difference to the long term cost of ownership of a manufacturing installation. The benefits of this approach effects safety, economics and the environment, all of which have become of greater importance over recent years.

Course Outline

Inherently Safer Design training is for professionals involved in operations and maintenance of machines in industry. It is for a better understanding of the hazards associated with the machines used in the industry. Control measures and risk levels can be assessed for effective control of the hazards. The training covers Incident history data, Machine hazards, Machine Safety and interlocking as a safety measure.

Machine Safety

Course Outline

The training based on BS EN ISO 13857, EN 1037 BS EN 1088, is for professionals involved in operations and maintenance of machines in industry. It is for a better understanding of the hazards associated with the machines used in the industry. Control measures and risk levels can be assessed for effective control of the hazards. The training covers Incident history data, Machine hazards, Machine Safety and interlocking as a safety measure.

Duration: 1 day
Level: Advanced
Type: Classroom training
In company: Contact us
Open sessions: 11 October, Singapore
Fee per participant (excl. taxes): USD 450

Duration: 1 day
Level: Advanced
Type: Classroom training
In company: Contact us
Open sessions: 29 March, Delhi
Fee per participant (excl. taxes): Rs 14,500
Process Safety Management

Course Outline

With OSHA-PSM standard as a base, this workshop addresses the requirements for the identification and management of hazards associated with the processes using hazardous chemicals to help enhance the process safety in the workplace. The program will teach candidates how to develop and implement an effective and successful process safety management (PSM) program, not only in order to meet regulatory compliance requirements, but more significantly, to incorporate it into a company’s safety culture and daily operations. The program is designed to highlight the essential elements of any process safety management system and to emphasize more specifically any pitfalls that could stand in the way of making it work.

Reliability, Availability and Maintainability (RAM)

Course Outline

This one day course on RAM will teach attendees the risks in a project that can result from failure of key components or systems. Candidates will be taught the relationship between RAM and risk by systematically modelling the inter-dependency of different elements of a system and how these models can be developed in either a dynamic or static RAM model. The course will also cover how to choose the RAM models depending on the risks to be investigated. The course will help candidate to understand Reliability, Availability, and Maintainability (RAM) of the system design which attributes significant impacts on the sustainment or total Life Cycle Costs (LCC) of a developed system. Considering that RAM has a direct impact on profit through lost production and maintenance costs the program helps attendees appreciate how a RAM study can increase system productivity, increase the overall profit, as well as reduce the total life cycle cost which includes lower production cost, maintenance cost and operating cost.
Risk Management

Course Outline

The workshop is aimed at sensitising and increase awareness of tools that are being used internationally for ensuring Safety, operability and availability for process industries. It provides an insight of systematic techniques to establish the level of risk associated with the identified hazard, thereby helping to mitigate it through corrective/preventive actions. Risk evaluation methods for developing the most suitable safeguards will be discussed. The program is illustrated with real examples from industry (both batch and continuous processes).

Safety Assurance Strategy

Course Outline

This course will teach attendees how to undertake a thorough review of their Safety Management System and evaluate safety awareness at various levels within the organisation. It will also coach attendees on how to conduct a gap analysis and implement a safety strategy so that identified gaps are addressed adequately.

The program also coaches participants how to develop an effective implementation plan with clearly defined responsibilities and how the in-house team can implement the safety strategy, without the constant dependence on external consultants.
Safety Integrity Level & Layers Of Protection Analysis (SIL & LOPA)

Course Outline

This workshop equips the participants to evaluate the integrity of a facility/system in terms of the adequacy of its control measures and safeguards in place. Using a combined training approach involving both lectured learning and practical exercises this course guides delegates through basic principles to issues relating to Safety Instrumented Functions.

Simultaneously, the layers of protection analysis can help identify the preventive and mitigative protection levels provided and help to make consistent decisions on the adequacy of existing or proposed layers of protection against a MAH scenario.

Duration: 1 day
Level: Advanced
Type: Classroom training
In company: Contact us
Open sessions: 8 February, Bangalore
               12 April, Baddi
Fee per participant (excl. taxes): Rs 14,500
<table>
<thead>
<tr>
<th>Sessions 2019</th>
<th>Fee</th>
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<tbody>
<tr>
<td>21 June, Vadodara</td>
<td>Rs 14,500</td>
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<tr>
<td>12 February, Sricity</td>
<td>Rs 14,500</td>
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<tr>
<td>30 August, Vadodara</td>
<td>Rs 14,500</td>
</tr>
<tr>
<td>13 September, Bangkok</td>
<td>USD 425</td>
</tr>
<tr>
<td>20 December, Vizag</td>
<td>Rs 14,500</td>
</tr>
<tr>
<td>15 March, Mumbai</td>
<td>Rs 14,500</td>
</tr>
<tr>
<td>6 September, Delhi</td>
<td>Rs 14,500</td>
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<td>11 October, Singapore</td>
<td>USD 450</td>
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<tr>
<td>29 March, Delhi</td>
<td>Rs 14,500</td>
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<td>22 January, Indore</td>
<td>Rs 14,500</td>
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<tr>
<td>26 April, Guwahati</td>
<td>Rs 14,500</td>
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<tr>
<td>12 July, Hyderabad</td>
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<tr>
<td>15 November, Mumbai</td>
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<td>8 November, Delhi</td>
<td>Rs 14,500</td>
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<td>7 June, Chandigarh</td>
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<td>9 August, Kolkata</td>
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</tr>
</tbody>
</table>
Enclosed herewith Cheque / DD in favour of DEKRA (India) Pvt. Ltd. for Rs.

Dated ________________

Drawn on ________________

For details contact:

MS. SONAL GAUR
Mobile: +91 8800796687
Landline: +91 11 26136979
Fax: +91 11 26135979
Email: sonal.gaur@dekra.com
Email: info-in@dekra.com
Our International Locations

DEKRA Services, S.A.
Valencia, +34 96 136 68 14
Barcelona, +34 934 920 950
Zaragoza, +34 976 304 448
Madrid, +34 912 975 403
www.dekra-process-safety.es

Chilworth Technology Ltd
(Southampton, UK)
+44 (0) 23 8076 0722
www.dekra-process-safety.co.uk

DEKRA Solutions B.V.
Anhem, The Netherlands
+31 88 9683847
www.dekra-process-safety.nl

Chilworth France
(Laon, France)
+33 (0) 4 72 44 05 52

Chilworth Technology Inc (USA)
Princeton, NJ, +1 609 799 4449
Schaumburg, +1 847 925 8100
www.dekra-process-safety.com

DEKRA Italia Srl
(Cinisella Balsamo, Italy)
+39 02 89929600
www.dekra-process-safety.it

DEKRA (India) Pvt. Ltd.
Mumbai +91 (0) 22 6694 2350
New Delhi +91 (0) 11 2613 6979
Hyderabad +91 90001 81721
www.dekra-process-safety.in

DEKRA China
10F, Building 16, No. 250
Jiangchangsao Road
Shanghai, 200436, P.R. China
+86 21 6056 76 66
www.dekra-process-safety.cn

DEKRA
On the safe side.
DEKRA Process Safety, India
Delhi Office
Muskaan Complex, Plot 3,
B-2, Vasant Kunj,
New Delhi 110070, INDIA.
Tel: +91 11 2613 6979
Fax: +91 11 2613 5979

Hyderabad Office
10 HemDurga Plaza,
Allwyn Cross Road,
Miyapur, Hyderabad 500 049
Tel: +91 40 23 04 69 44

Mumbai Office
708, Lodha Supremus
Nehru Nagar, Kanjurmarg (E)
Mumbai - 400 042, INDIA
Tel: +91 22 66 94 23 50

E-mail: Info-in@dekra.com