



SARNIA - LAMBTON

INDUSTRIAL EDUCATIONAL CO-OPERATIVE

DRAFT HEALTH AND SAFETY TRAINING STANDARD
DESIGN TEMPLATE

Course Title:

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Training Design Template

NEEDS ANALYSIS

Training design begins with identifying opportunities or problems, what is/what should be, resulting gaps, gaps in standards among IEC member companies, the purpose of planned instruction, and how the instruction or training will resolve the initial problem/realize the opportunity

Element	Business Needs/Performance Goals	Example
<p><i>Needs Analysis</i></p>	<ul style="list-style-type: none"> • Define the need: • What is the opportunity or problem at the organizational or client level? What could be the result if the opportunity was realized or the problem solved? • What is the current state of affairs (what is)? What's the desired state of affairs (what should be)? What's the gap between the two? • What are the gaps in standards between client member companies (see gap analysis appendix at end of document) • What level of performance/competency/behaviour is needed? 	<ul style="list-style-type: none"> • Too many vehicle mishaps are occurring on client sites (2008 – x # of incidents) • Driver actions are the leading cause of mishaps (e.g. rolling stops, failure to observe weather/road conditions, driver inattention) • Drivers need to exhibit safe driving habits at all times • Safe driving skills will reduce vehicle mishaps by 50% in 2009 (a reduction of x # of incidents)
<p>Element</p>		
<p><i>Needs Analysis</i></p> <p><i>*What is the opportunity or problem?</i></p>	<p>The primary problem identified is that at the present time, it is virtually impossible to determine whether or not a worker has received sufficient and appropriate information about Asbestos.</p>	

<p><i>What is the current state of affairs?</i></p>	<p>Different training curriculums are being used in relation to the requirements for Asbestos Awareness. The differences can be seen at both the client and contractor levels.</p> <p>Different levels of training are being provided in various organizations(CSAO,IEC,Internal)</p> <p>Inconsistencies in training messages and recording of training.</p>	
<p><i>What is the desired state of affairs?</i></p>	<p>Every worker who may work around Asbestos is to be trained to a recognized, standard level of Asbestos awareness including illnesses,causes,controls and exposure. This training does not cover the competency requirement for type 1, 2 or 3 abatement.</p>	
<p><i>What are the gaps in standards?</i></p>	<p>Demolition, Identification, Reporting Forms and PPE</p>	
<p><i>What level of performance/competency/behaviour is needed?</i></p>	<p>This training program must meet the basic requirements for Asbestos Awareness training under regulation 278/05, section 8 (e) Asbestos Hazards</p>	
<p>Element</p>	<p>Learner characteristics/demographics</p>	<p>Example</p>
<p><i>Target Audience</i></p>	<ul style="list-style-type: none"> Define the learners - for whom is the training being developed? 	<ul style="list-style-type: none"> The target audience is all individuals (contract and plant personnel) who operate contract or plant

	<ul style="list-style-type: none"> • What are their characteristics? Is the target audience all contractors, construction workers, plant personnel? • What about other types of workers – i.e. building cleaners, office staff, environmental consultants, etc.? • What level of readiness must individuals demonstrate/possess to achieve the desired learning objectives? 	<p>vehicles – cars/trucks, etc. on member client sites</p> <ul style="list-style-type: none"> • Individuals must possess a current Driver’s License and be able to read/write/understand English
Element		
<i>Target Audience</i>	<ul style="list-style-type: none"> • Building Trades – all • Cleaning Staff – on site • Site Plant Personal <ol style="list-style-type: none"> 1. Operations 2. Engineers 3. Supervision 4. Inspection 5. Maintenance 6. Process Truck Drivers – Transports 7. Occupants of know Asbestos containing Buildings 	<ul style="list-style-type: none"> • Anyone with the potential to be exposed

OUTCOMES OF THE NEEDS ANALYSIS

Once the needs have been identified, they can be translated into descriptions of desirable outcomes (**learning objectives**). To prepare for writing learning objectives, a task/topic analysis is completed to identify necessary knowledge/skill/attitude components

Element	What Knowledge/Skills/Attitudes are Required?		Example
<i>Task/Topic Analysis</i>	Task/topic analysis attempts to define: <ul style="list-style-type: none"> • What do learners need to know or understand (knowledge)? • What do learners need to be able to do (skills)? • How should they feel about that (attitudes)? 		Knowledge: <ul style="list-style-type: none"> • Rules of the road • Common causes of vehicle mishaps • Collision prevention techniques
Element	What Knowledge/Skills/Attitudes are required?		Example
<i>Task/Topic Analysis</i>	<ul style="list-style-type: none"> • To get at knowledge/skill/attitude components, you may want to consider facts, concepts, principles or rules, procedures, processes, interpersonal skills, etc. 		Skills: <ul style="list-style-type: none"> • Approaching an intersection • Stopping/yielding • Mirror checking Attitudes: <ul style="list-style-type: none"> • Respect for other drivers/pedestrians • Defensive driving • Safety
Element			
<i>Task/Topic Analysis</i> <ul style="list-style-type: none"> • <i>Asbestos History</i> 	Knowledge Components: <ul style="list-style-type: none"> • What is Asbestos • Where was it used • Why was it used • Sources 	Skill Components: <ul style="list-style-type: none"> • Being able to identify sources of Asbestos encountered in their workplace 	Attitudinal Components: <ul style="list-style-type: none"> • Informed • Understand safe guards in place • Comfort of knowledge • Proactive in looking at work

<ul style="list-style-type: none"> <i>Duties of owner, contractor, worker</i> 	<p>Training Regulations Disclosure of inventory Right to know</p>	<p>Workers empowered with right to know, right to ask</p>	<p>and identifying potential issues Confidence that they can ask questions of Asbestos at their workplace</p>
<ul style="list-style-type: none"> <i>Types of Asbestos</i> 	<p>Different types of Asbestos</p>	<p>Knowledge</p>	<p>Awareness only</p>
<ul style="list-style-type: none"> <i>Health Concerns</i> 	<p>Exposure Forms Incident Report forms Worker concerns Diseases Risk potential</p>	<p>Understand how the body handles Asbestos fibres. How, who, when and why exposure forms are used.</p>	
<ul style="list-style-type: none"> <i>Site Specific</i> 	<p>Major gaps between sites</p>	<p>You should know of any major differences between plants that are not standard in the valley</p>	<p>Confident that they can ask for information</p>
<ul style="list-style-type: none"> <i>Identification</i> 	<p>On site analysis – off site analysis</p>		
<ul style="list-style-type: none"> <i>Controls/Procedures</i> 	<p>PPE Different classes of work</p>		<p>Confidence</p>

	Demolition	<p>Describe the difference between Friable and Non-Friable Asbestos.</p> <p>Understand types of work</p>	<p>Appreciate controls in place</p> <p>Know what types of work you can do</p>
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ESTABLISHING LEARNING OBJECTIVES

When all the relevant components of a topic have been identified, the next step is to write knowledge, skill and attitudinal objectives for the most critical components

Properly written learning objectives form the basis for choosing instructional techniques, media, and other resources such as props and equipment
They also provide some guidance for evaluation during and after the training program is complete

Element	Conditions, Performance, Measurement/Standards	Example
<i>Learning Objectives</i>	<ul style="list-style-type: none"> • What are the most important knowledge/skill/attitudinal objectives? • Learning objectives should identify what’s important and necessary for the learner to learn • Learning objectives should clearly describe the desired performance (behaviour), conditions under which the performance occurs, and how well the learner must perform (measurement/standard) 	<p>Conditions:</p> <ul style="list-style-type: none"> • Rules of the road, driving videos, driving simulation, practice and feedback <p>Behaviour:</p> <ul style="list-style-type: none"> • Describe reasons for driver inattention • Perform proper stops at intersections • Value safe driving habits in self and others

	<ul style="list-style-type: none"> • Action verbs should be used to describe the behaviour • Although conditions may not be directly stated as part of the learning objective, they should be taken into consideration as they include resources, methods, etc. that the instructor provides to contribute to the performance • Measurement/standards include: quality (how well), quantity (how much), accuracy (e.g. without errors), time, rate, precision, percent correct, use of material, safety, etc. • What is the order/sequencing of the objectives? 	<p>Measurement:</p> <ul style="list-style-type: none"> • Drive a vehicle without breaking any rules of the road
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ACTION VERBS

Action verbs are used so that the performance/behaviour is observable, measurable, and precise

Use of verbs such as “to know” or “to understand” is discouraged as these verbs are not observable, measurable, and are more open to interpretation

Knowledge	Skill	Attitudinal
<ul style="list-style-type: none"> • Describe, identify, list, recognize, name, state • Define, distinguish, differentiate, discuss • Interpret, explain, label, select, compare 	<ul style="list-style-type: none"> • Operate, grasp, rotate, position, turn, tighten, shorten, construct, measure, attach • Start, perform, conduct, inspect, produce • Demonstrate, apply, examine 	<ul style="list-style-type: none"> • Accept, judge, praise, value, favour, decide, appreciate
Elements /Knowledge Objectives	Skill Objectives	Attitudinal Objectives
<p>1/Duties of owner, contractor, worker/ They should all understand that this is an awareness class only. Know that there is an Asbestos Regulation. Know that the companies will give disclosure on inventory. Training Requirement and</p>	<p>Recognize Asbestos applications, uses of asbestos.</p>	<p>Confidence that they can ask questions-they have the right to know</p>

<p>they have the right to know.</p> <p>2/ Asbestos History – Know the different uses for Asbestos. Asbestos in Lambton County. All types are hazardous. Know its naturally occurring. What happened 30 years ago compared to today’s environment.</p> <p>3/ Types of Asbestos – Know there are different types. Respect all Asbestos the same. Definition of Friable & Non-Friable. Regulations the same, but handled differently</p> <p>4/ Health Concerns – Know report forms(exposure) and why they are used – Diseases – the risks of not wearing PPE. Smoking, consequences of exposure</p> <p>5/ Controls/Procedures – Friable vs Non-Friable – areas where they work could have Asbestos, Types of work – procedures for type of work. Proper PPE. Knowing tagging systems – Demolition</p> <p>6/ Site Specific – Should know labeling, banding, tags, etc. understand when insulation analysis could be done and where</p> <p>7/ Identification – Understand how Asbestos is Identified and used in area of work</p> <p>** Topic #6 & #7 COULD BE COMBINED.</p>	<p>Describe some uses in their work if any. Know their are different names of Asbestos. What has changed from the past. Realize historical legacy.</p> <p>Know if there are procedures for their work, if involved with Asbestos</p> <p>Know what to do if exposed, reporting procedures</p> <p>Know what to do if accidently exposed</p> <p>Show tags, banding, any Asbestos identification in the area of their work</p> <p>Follow asbestos procedures – show identification system</p>	<p>Empowerment, sure of self in the workplace, confident,</p> <p>Have the feeling that procedures are in place to protect them.</p> <p>Knowing that if exposed there are things done ie. Reports etc. on behalf of the worker. They will have less fear of Asbestos in the workplace. Tests are available, x-rays, etc</p> <p>Understand procedures are in place for us all</p> <p>Confident they know tagging etc. for that specific site</p> <p>Confident tags are correct</p>
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EVALUATION

Evaluation strategies should be defined at this stage of the process as evaluation helps drive program content/design - an appropriate evaluation strategy determines if: 1) the learners liked the training 2) they learned and acquired the desired behaviours, 3) they applied these behaviours in the field/on the job, and 4) the training had the desired impact, i.e. the original problem or opportunity was resolved/realized - evaluation also seeks to verify to what degree the program was appropriate, adequate, efficient, and effective

Element	Measuring Appropriateness, Adequacy, Effectiveness, Efficiency	Example
<i>Evaluation</i>	<ul style="list-style-type: none"> • Reaction: measures learners’ reaction to the training (appropriate materials/content/instructor, adequate time, sufficient practice, adequate feedback), efficient use of time/energy/costs for learning, general comments about effectiveness • Learning: measured by achievement of the learning objectives – increase in knowledge measured by testing (paper/pencil); acquisition of skill measured by observing performance under 	<ul style="list-style-type: none"> • Feedback sheet completed by learners at the completion of Safe Driving Program • Driving simulation test at program completion; learners to pass the simulation with a minimum score of 85% • Observation checklist/interview/survey 3 mos. post-training

	<p>prescribed conditions; measuring changes in attitude inferred by performance</p> <ul style="list-style-type: none"> • Behaviour/Performance: what is the level of competence /degree of improved performance demonstrated by learners in the field? Who is responsible for measuring/evaluating this? • Impact: To what extent or degree was the original purpose of the training achieved? How effective was the training in resolving the original problem or realizing a new opportunity? Were gaps closed? Were gaps in standards company to company eliminated? Were costs reduced or were revenues increased? 	<ul style="list-style-type: none"> • Vehicle mishap review 6 mos. post-training and one year – did the training reduce vehicle mishaps by 50%? What cost savings were achieved?
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Element	Reaction Level	Learning Level	Performance/Behaviour Level	Impact Level
<i>Evaluation</i>				

CONTENT AND DELIVERY

Correctly identifying/analyzing needs, translating needs into appropriate learning objectives, prioritizing/organizing them, and devising the evaluation strategy upfront provides the required information/inputs to map the program content, decide on appropriate structures (i.e. large group, small groups, etc.) and then match instructional methods to the three types of objectives: knowledge/skill/attitude – equipment, props, media should also be identified

One other important consideration for delivery is the incorporation of **adult learning principles**

Element	Some Adult Learning Principles
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<p>Content/Delivery</p>	<ul style="list-style-type: none"> • Adult learners benefit from two way communication – avoid overuse of lectures; emphasize discussion • Adults learn what they perceive to be useful in their lives – make content and materials relevant • Adults learn best when they are treated with respect in a climate that is informal and personal • Adults filter learning through their value systems – provide activities that focus on knowledge, skills, and attitudes • Rate of forgetting may be very quick after learning – repetition of the message is required (and repetition of identical materials is often as effective as changing the story!) – elements to be learned must seem to belong together/have some relationship/sequence • Learning is enhanced by active practice – not passive reception • Adults may have somewhat fixed points of view that make them closed to new ways of thinking/behaving – include feedback and opportunities to experiment • Training messages are more easily learned/accepted if they do not interfere with earlier habits – draw on learners’ prior experiences • The capacity of learners to learn is important when considering what can be learned/how long it will take – know your audience! 		
<p>Element</p>	<p>Matching Instructional Techniques to Learning Objectives</p>		<p>Example</p>
<p>Content – outline the need to know topics in order of proper sequence and for <u>each topic</u>, identify corresponding learning objective(s) and appropriate instructional techniques</p>	<ul style="list-style-type: none"> • If the objective is a change or gain in knowledge/understanding... 	<p>...then appropriate methods are:</p> <ul style="list-style-type: none"> • PPP, readings, lecture, videos, debate, panel presentation, demonstration, discussion (problem-solving or case), case methods, games, questions 	<ul style="list-style-type: none"> • Video on safe training habits • Problem-solving discussion • Quiz
	<ul style="list-style-type: none"> • If the objective is a change or gain in skills... 	<p>...then appropriate methods are:</p> <ul style="list-style-type: none"> • Drill, coaching, role-play, skill practice, participant cases, in-basket exercise, T-group 	<ul style="list-style-type: none"> • Driving simulation/skill practice
	<ul style="list-style-type: none"> • If the objective is a change or gain in attitudes/values... 	<p>...then appropriate methods are:</p> <ul style="list-style-type: none"> • Role-playing, group-centred 	<ul style="list-style-type: none"> • Experience-sharing discussion

		or experience-sharing discussion, case method, videos, debate, critical incident process, dramatization, games	
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STRUCTURES

Structures involve the ways in which activities are arranged – think one-one-one, small groups, large groups, individual work, and pairs

Element	Matching Instructional Techniques to Learning Objectives			
<i>Content</i> /Topic	Knowledge/ understanding	Objectives	Instructional Techniques/Media/ Equipment	Structures
	Skills	Objectives	Instructional Techniques/Media/ Equipment	Structures

Training Design Template

	Attitudes/values	Objectives	Instructional Techniques/Media/ Equipment	Structures
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Copy this table as many times as necessary to identify/describe content, objectives, methods, structures, etc.

Element	Matching Instructional Techniques to Learning Objectives			
<i>Content</i> /Topic	Knowledge/ understanding	Objectives	Instructional Techniques/Media/ Equipment	Structures
	Skills	Objectives	Instructional Techniques/Media/ Equipment	Structures

Training Design Template

	Attitudes/values	Objectives	Instructional Techniques/Media/ Equipment	Structures

Element	Matching Instructional Techniques to Learning Objectives			
<i>Content</i> /Topic	Knowledge/ understanding	Objectives	Instructional Techniques/Media/ Equipment	Structures
	Skills	Objectives	Instructional Techniques/Media/ Equipment	Structures

	Attitudes/values	Objectives	Instructional Techniques/Media/ Equipment	Structures

General Training Questions

Initial Course

How is this course instructed: Class Room/CBT?

Recertification

What is the recertification method?
What is the frequency?

Training Course Length

How long is this course: E.g. 1 hr?

Trainer Requirements

Do we have any specific skills that the trainer needs to do the training

Instructor Materials

Any specific material or things the trainer will need?

References

Regulations

Any additional reference material

Reference material used to develop content

Gap Analysis

Topic	Needs Analysis	Company A	Company B	Company C
Use Topic Structure from Needs Analysis	<ul style="list-style-type: none"> • Bullet point form • Define the need • What does the trainee need to understand/perform/ behave like 	<ul style="list-style-type: none"> • Analyze Gaps from Company against needs • Add additional companies as needed 		
Sub topic titles, topic specific				

This table may be used to identify gaps in standards between/among IEC member companies

Additionally, the SME teams may want to do this in excel and then import into report