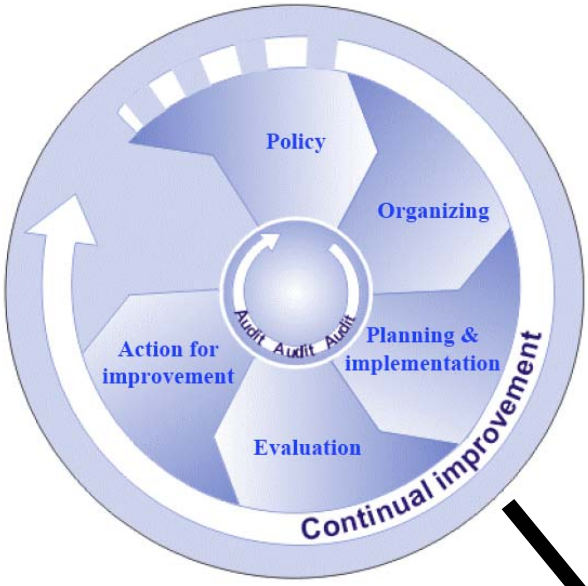
International Labour Office
Occupational Safety & Health for the Construction Industry

ILO Construction OS&H

A free, comprehensive, international, digital training package in occupational safety and health for the construction industry



Tutors' guide

A training package for improving

systems, procedures and practices

for the benefit of all who participate

in this major and socially important industry

"The primary goal of the ILO today is to promote opportunities for women and men to obtain decent and productive work, in conditions of freedom, equity, security and human dignity."

(Juan Somavia, ILO Director-General)

International Labour Office
Occupational Safety & Health for the Construction Industry

ILO CONSTRUCTION OS&H

A free, comprehensive, international, digital training package for the construction industry

TUTORS' INTRODUCTION

SUMMARY

Construction remains one of the industries with very high rates of accidents and ill health. Many of the 'accidents' are not accidents at all, but occupational safety and health 'incidents', because they could have been avoided by good practices, procedures and equipment, together with appropriate knowledge and responsible attitudes. This is a problem at least partially related to lack of proper training. A worldwide analysis by the ILO in 2007 concluded that there was a shortage of comprehensive, internationally relevant OS&H training materials freely available in the public domain.

The overall aim of **Construction OS&H** is to provide an international Occupational Safety & Health (OS&H) training package, designed for all those who are involved in construction projects, and made freely available in the public domain by the ILO. It is designed specifically for the four main groups of participants in the industry (the 'industry groups') - clients, design and project management teams, construction companies ('contractors') and workers – but it will also be useful to other groups, such as government inspectors and company OS&H officers.

Construction OS&H provides trainers with a substantial digital resource, rather than a set of four linear programmes. It is structured so that competent trainers can adapt the contents for the four sets of industry groups and perhaps other trainees within the construction industry, to offer a range of training events, ranging from half-day seminars to one-week or possibly two-week courses. The content of **Construction OS&H** may also be used in more formal education programmes, such as Bachelor's and Master's degrees in construction and more general built environment subjects.

The principal authors were Professor Richard Neale, Emeritus Professor of Construction Management, University of Glamorgan, Wales, UK; and Fiona Murie, Director, Occupational Health and Safety, and Construction Coordinator, BWI. Dr Joanna Waters proofread the whole package with great care and expertise and also made pertinent editorial suggestions.

Construction OS&H is made up of seven main components:

Tutors' Guide. This is the core of **Construction OS&H** because it explains the content of the package and how to use it.

Knowledge Base. This provides the sources of all the content of the package in a digital form. The Knowledge Base also includes **Downloads** of some of the main sources of information.

Theme Summaries. **Construction OS&H** is based on 15 Theme Summaries, in digital form, which provide the whole educational content of the programme.

Theme PowerPoint Presentations (PPPs). A PPP has been compiled from each Theme Summary, which provides the main means by which the information in the Themes will be presented.

Model Courses. **Construction OS&H** is a very flexible training resource and the content can be used in many ways, but in order to give Tutors some guidance on the use of the package, four Model Courses are provided; one each for clients, design & project management teams, construction companies and workers.

Participants' Handbooks. The content of each Model Course has been summarised in a Participants' Handbook that can be given to the participants at the end of the course so that they may use it as a reference to put into practice what they have learned.

Web site. All the above is available on a distinct ILO web site, for free downloading.

So, **Construction OS&H** offers a flexible and comprehensive educational resource for tutors who wish to offer training programmes and events that will improve the occupational safety and health of all those involved in this major and socially important industry.

This structure should enable **Construction OS&H** to become a progressive and continually developing educational resource, making full use of contemporary digital media to become:

"A digital OS&H human resource development programme for the 21st century construction industry"

The ILO has made careful efforts to ensure that the contents of the package are applicable in most countries of the world, but feedback and additional training materials from the international OS&H training community that will enhance this global applicability will be very welcome.

Ownership of Construction OS&H

The whole package may be freely downloaded but the source should be acknowledged.

The package itself contains many images, documents and other information that has been downloaded from Internet sites from many countries and organisations. The sources have been acknowledged and they have been contacted by email to gain permission, with follow-up emails where necessary. Every effort has been made to trace copyright holders and to obtain their permission for the use of copyright materials. The responses have been very positive and helpful. Nevertheless, if any of the owners of any item used are not willing for it to be included in this package, please contact Dr Edmundo Werna, Sectoral Studies, ILO (werna@ilo.org) and it will be removed.

TUTORS' INTRODUCTION **Summary of content**	
1.	Preface
2.	Aims and objectives
3.	Profile of the tutors
4.	Profiles of the intended participants
5.	Educational basis of the programmes
6.	Outline structure of **Construction OS&H**
7.	Overview of the Theme Summaries & the modular course structure
8.	Delivering courses based on **Construction OS&H**
9.	The internet and the sharing network
10.	Definitions from the ILO Code of Practice and ILO-OSH 2001

1 PREFACE

"In construction at least 108 thousand workers are killed on site every year, that figure represents 30 per cent of all fatal injuries. That is one person dying every five minutes because of bad, and illegal, working conditions. The construction industry has a deservedly notorious reputation as being dirty, difficult and dangerous."

"Workers are killed, injured and made sick whilst carrying out routine jobs. The hazards are well known and so are the prevention measures. The overwhelming majority of "accidents" are absolutely predictable and preventable. They are caused by failure to manage risks, or by straightforward negligence on the part of the employer."

(Building and Woodworkers' International web site http://www.bwint.org/default.asp?Issue=OSH&Language=EN)

In 1999 the International Labour Organisation (ILO) initiated an extensive programme entitled "Decent Work", followed by the SafeWork programme which aims to create worldwide awareness of the occurrence and consequences of work-related accidents, injuries and diseases.

"The primary goal of the ILO today is to promote opportunities for women and men to obtain decent and productive work, in conditions of freedom, equity, security and human dignity."

(Juan Somavia, ILO Director-General; http://www.ilo.org/global/About_the_ILO/Mainpillars/WhatisDecentWork/lang--en/index.htm)

"Work is central to people's well-being. In addition to providing income, work can pave the way for broader social and economic advancement, strengthening individuals, their families and communities. Such progress, however, hinges on work that is decent. Decent work sums up the aspirations of people in their working lives."

(ILO's vision of decent work http://www.ilo.org/global/About_the_ILO/lang--en/index.htm)

Construction OS&H is based on this vision of 'decent work'. It has been produced by the ILO and Building and Woodworkers International (BWI) working in partnership.

"For the BWI, the most effective way to ensure that worker's interests are protected in the work place is through legislation and regulation. In this connection, we work with the International Labour Organization (ILO) to lobby for the implementation of ILO standards and their respect in World Bank agreements."

(http://www.bwint.org)

This Tutors' Introduction provides an educational overview of the programme following the sections given in the table above.

2 AIMS AND OBJECTIVES

Overall aim

The overall aim is to compile a comprehensive, international, digital Occupational Safety & Health (OS&H) training package, made freely available in the public domain by the ILO.

Overall objective

Production of a universally applicable package of OS&H training materials, within a systematic project management context, relevant to a global audience and applicable in a variety of legislative environments, bespoke for the construction sector and the main 'industry groups' within the sector: clients, design and project management teams, construction companies ('contractors') and workers. This will provide equality of access globally to ensure that those most at need have access to good quality and current OS&H and educational materials.

3 PROFILE OF THE TUTORS

Construction OS&H provides tutors with information, teaching and learning materials and general guidance. In order to compile this package, some assumptions have had to be made about the experience and abilities of the tutors who will use it. In brief, these assumptions are that the tutors will:

- Have a good understanding and some practical experience of working in or with the construction industry
- Be experienced tutors: that is, they will be able to present and explain the content effectively, and will have the organisational and interpersonal skills to manage a training programme with the intended participants
- Be competent in the use of simple information computing technologies, such as the operation of a personal computer and software such as Microsoft Word, Excel and PowerPoint

- Be able to prepare simple visual aids, principally through PowerPoint, including the use of compact digital cameras

Some more guidance on the use of this package will be provided in the remainder of this Tutors' Guide.

4 PROFILES OF THE INTENDED PARTICIPANTS

Construction OS&H provides distinct training programmes for the four main 'industry groups' in the construction industry: clients, design and project management teams, construction companies ('contractors') and workers. An essential requirement for the design of a training programme is to have a clear view of the intended recipients, so when designing and compiling **Construction OS&H**, a profile has been assumed for each of the participant groups, together with their needs for knowledge of OS&H policies and practices. These are summarised in the following sections.

Clients

The clients for construction works are probably as diverse as life itself. Clients for major public works projects will be represented by employees who have a high degree of technical and project management knowledge, as well as experience of managing construction projects. On the other hand, for private clients, regardless of the size of a project, it may be the first such project in which they have been involved.

Their projects range from very small to very large, but **Construction OS&H** contains relevant information for all but very specialized projects. For example, every person on every project must use personal protective clothing and equipment.

So, in order to respond to this broad range of participants, a basic assumption is that they will need a good grounding in the theory and practice of managing construction projects.

Clients tend to focus on end results rather than the design and construction process, so OS&H may not be uppermost in their thoughts at the start of a project. So, they will benefit from a good review of OS&H, especially the need for comprehensive OS&H management systems and the inclusion of strong clauses requiring diligent OS&H compliance in all contracts.

In the final analysis, the client has to pay for everything, so there may be difficult discussions about the cost of comprehensive OS&H practices and procedures. There is, therefore, a need for serious consideration of ethics and humanity, the rights of individuals to lead safe and healthy working lives, and the very strong 'business case' that can be made for effective OS&H. An important consideration is that good design and effective project management can eliminate many hazards and risks 'by design' rather than by providing additional safety measures during the construction process, at additional cost, and clients should insist on this when employing designers and construction companies.

Clients also have a duty of care to their own employees and the general public so will need some specific and detailed knowledge of OS&H policies and practices in this context.

Design and project management teams

Design and project management teams are made up of professional designers, such as architects and engineers, specialists (such as interior designers) and other professionals who manage the project and its costs. Most design teams will have experience of construction projects, but they may view OS&H to be entirely the concern of the construction company. They may also tend to focus on the design of the works when finished, rather than the process by which they are built in practice, so the key phrase for them is '**OS&H by design**'. This will require an understanding of the management of construction projects and technical knowledge of construction work.

OS&H by design is a relatively new and developing process, so design teams who attend **Construction OS&H** events can make a contribution to the development of this subject.

Construction companies

Throughout the world, the construction industries operate in a way that by far the largest proportion of a nation's construction work is done by a relatively few major companies, but the industry as a whole has many very small companies, most of them employing less than 10 people. There is some evidence that larger companies manage OS&H more effectively than smaller ones, but the safety record of the industry is such that all need comprehensive exposure to the contents of **Construction OS&H**. The business case is an important issue for all construction companies, who are in the business in order to make a profit. It can be shown that for most construction work, establishing safe working from the outset can be cheaper overall.

Workers

Workers have much less control over their own OS&H than any other group in this **Construction OS&H** programme. Crucially, they must know their rights and obligations and be prepared to argue for them. They must also be knowledgeable and skilful in the use of OS&H practices and the equipment provided for their use. It is very important for them to know what their employers are expected to provide in order to safeguard their safety and health.

It must be accepted also that workers have obligations to themselves, their fellow workers and their employees to behave in a prudent manner and to engage seriously in striving for 'zero incidents' and a high level of well-being for all.

Generally

All these participants will require some common understanding, for example their rights and obligations under law and some knowledge of such general concepts such as Corporate Social Responsibility (CSR).

Additional participants

Although **Construction OS&H** has been designed for the four sets of industry groups described above, it will also be useful to other groups, an obvious example being safety specialists, such as government inspectors and company safety officers. The package has been designed in a very flexible way, so that Tutors may adapt it quite easily for other participants.

5 EDUCATIONAL BASIS OF THE PROGRAMMES

The following well-known principles and practices of teaching and learning were used in the design and drafting of this training package.

ASK: Attitudes, Skills and Knowledge

These are the main elements of most training programmes, and it is useful to focus on them separately. It is generally recognised that **knowledge** is the easiest of the three to teach. Development of **skills** requires the knowledge to be applied; this takes time and requires exposure to practical tasks. Relevant and positive **attitudes** can be very difficult to develop, but are a very important feature of successful health and safety management.

Participation

"If I listen, I forget"
"If I see, I remember"
"If I do, I understand"
(Derived from Confucius: "I hear and I forget. I see and I remember. I do and I understand")

Thus an effective training programme must have an appropriate balance of formal lecturing, visual stimulation and active participation through exercises such as discussions, case-studies, site visits, etc.

Behavioural objectives

So far as possible, the training materials should be designed on the basis of what the participants can actually do as a result of the training, which they could not do before. For example, 'at the end of this training session, participants should be able to conduct a risk analysis for a simple construction operation' is a more effective training objective than 'to teach risk analysis for simple construction works'.

Evaluation

Evaluation is essential to any training programme because it is an element in a quality assurance system and can contribute to further development of the programme. End-of-programme participant questionnaires ('happy sheets') are of limited value on their own, and real learning can sometimes be very challenging but not always pleasurable, so the following process is suggested, which has been used in ILO courses before:

1. Simple 'tests' to establish the participants' knowledge, attitudes and perhaps skills, given at the beginning and end of the programme and perhaps also given at stages during a long programme. This process gives some indication of the effectiveness of the training, and may also assist the tutors to relate to the participants' specific needs and ambitions. These need not be given as formal 'tests', but embedded in exercises which form part of the training.

2. End of programme questionnaire and discussion (the discussion element is important because it requires the participants to justify and elaborate on their written opinions). Did the programme achieve its stated aims and objectives? Did the participants find it to be interesting, relevant and stimulating? What were the most/least useful elements?

3. Action plans. Participants are required to draft an action plan which describes how they will implement some (ideally all) of what they have learned.

4. Follow-up. Ideally, after about three months, the tutors should contact the participants (or a sample of them) and perhaps their employers to review the implementation of the action plans, assess how the materials taught have been used and what broader effects it has had on the individual's job and on employers and others.

Examples of each of these four elements of evaluation are given in all four Model Courses.

A flexible training resource

The construction industry presents an extensive and complex arena for training. When designing a training event, tutors will almost always be presented with a unique set of requirements, based on the needs of the intended participants and/or their employers, their attitudes, skills and knowledge, and the time available. Thus, although **Construction OS&H** is designed for four sets of industry groups, it has not been designed as four distinct and closely defined programmes because to do so would be to offer pre-determined training solutions to trainers who work in a complex context of needs, each of which needs to be assessed specifically.

Furthermore, there will be obvious overlap between the topics to be taught, since some aspects are common to more than one of the industry groups; provision of OS&H clauses in contracts being an obvious example. So, **Construction OS&H** has been designed as a flexible training resource, provided in both printed text and digital form, so that tutors may select the elements that they require for a specific programme and edit them accordingly.

6 OUTLINE STRUCTURE OF CONSTRUCTION OS&H

Overall structure

As shown in the diagram on the next page, **Construction OS&H** is made up of seven main components:

Tutors' Guide. This is the core of **Construction OS&H** because it explains the content of the package and how to use it. The **Guide** is in the form of a book with all the content also on a CD.

Knowledge Base. This provides the sources of all the content of the package, so enabling the Tutors to enhance their knowledge in order to deliver training programmes based on this package effectively. By following the references and links provided, Tutors will be able to 'reach back into the subject', so ensuring that, generally, they know more than the participants on most of the topics. This is important, because it is often the case that presenting a lecture is much easier than answering the subsequent questions.

Also in the **Knowledge base** folder is a **Downloads** folder. By their nature and purpose, web sites change over time so some of the key content (for example ILO conventions) has been downloaded and included in the Tutors' Guide.

Theme Summaries. **Construction OS&H** is based on 15 Theme Summaries, which provide the educational content of the programme. They are extensively illustrated and written so that training materials (such as handouts and PowerPoint presentations) can be easily produced for a wide range of programmes and events.

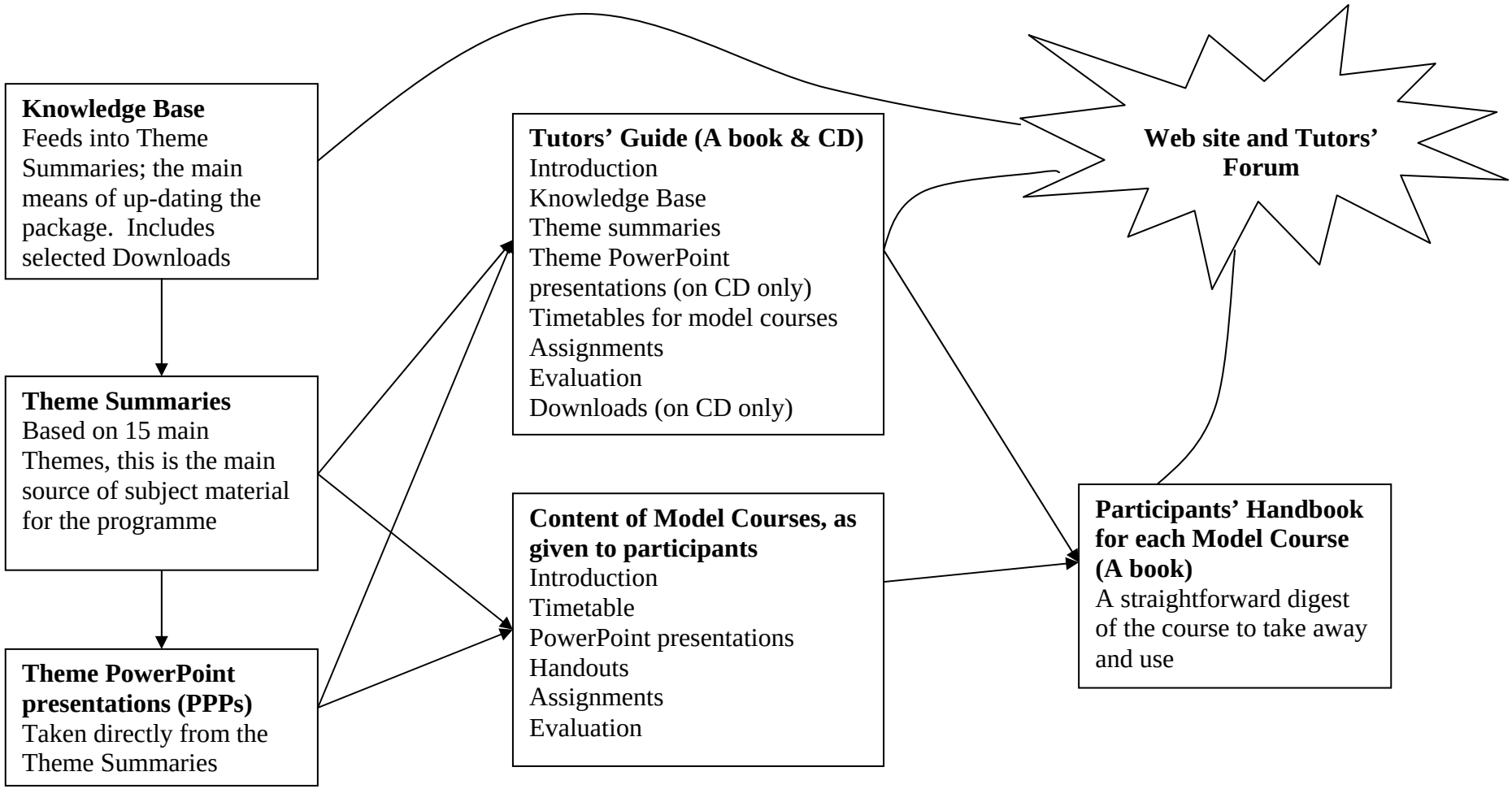
Theme PowerPoint Presentations (PPPs). A PPP has been compiled from each Theme Summary, which provides the main means by which the information in the Themes will be presented. Since these are the principal means of delivering training programmes, these PPPs also include class exercises and assignments that are not in the Theme Summaries. They may be easily adapted for a wide range of programmes and events.

Model Courses. Construction OS&H is a very flexible training resource and the content can be used in many ways: for example, one-day seminars, longer courses of a week or more duration, and part-time courses on a one-day a week basis. In order to give the Tutors some guidance on the use of the package, four Model Courses are provided, one each for clients, design and project management teams, construction companies and workers. These courses have been designed within a modular structure, so that the modules can be used individually or in different combinations; for example, a module could be the basis for an afternoon seminar or as an evening or part-time course. These courses are in the form of a 'participants' handbook' and a CD.

Participants' Handbooks. The content of each Model Course has been summarised in a printed Participants' Handbook that can be given to the participants at the end of the course so that they may use it as a reference to put into practice what they have learned. The Handbooks are also on the CDs provided in the Tutors' Guide, so that Tutors can use parts of them as handouts during the course, and also for other forms of training events.

Web site. All the above will be available as a distinct element of the ILO web site, for free downloading. It is hoped to extend this to include a 'Tutors' Forum' so that users of **Construction OS&H** can exchange experiences and offer further training materials and information.

CONSTRUCTION OS&H STRUCTURE DIAGRAM



7 OVERVIEW OF THE THEME SUMMARIES AND THE MODULAR COURSE STRUCTURE

Construction OS&H has been developed on the basis of 15 **Themes**, and each module in a training event draws its information from one or more **Theme Summaries**. There are four sets of **Themes**: Fundamental, Project management, Technical, and an Integration and concluding theme. Much of the information on OS&H and project management for construction projects that is generally available has some applicability to all the programmes for the different 'industry groups', so it is best to summarise this information in a 'knowledge base' then adapt it for specific training events.

The **Themes** are shown in the Table below:

THEME SETS AND TITLES	THEME NUMBERS
Fundamental themes	
Fundamental principles	1
General duties	2
Safe and healthy working environment	3
Workers' perspectives	4
Project management themes	
Principles of safe project management	5
Project planning and control for OS&H	6
Processes and systems	7
Welfare and project site	8
Technical themes	
Personal protective clothing & equipment (PPE)	9
General plant and equipment	10
Vertical movement	11
Horizontal movement	12
Working at or below ground level	13
Working at height	14
Integration and conclusion	
Project, concluding case study, evaluation	15
Further technical themes for future development	
Remote sites and living on site	
Tunnelling	
Piles and pile driving	
Deep foundations and caissons	
Working at great height	
Major demolition works	
Marine works	

Relationship between the Themes and the programmes for the four 'industry groups'

The table below shows an approximate estimate of the applicability of the content of each Theme Summary to the four groups

Themes	Clients	Design & project management teams	Construction companies	Workers
Fundamental				
Fundamental principles				
General duties				
Safe & healthy environment				
Workers' perspectives				
Project management				
Safe project management				
Planning & control				
Processes & systems				
Welfare & project site				
Technical				
PPE				
General plant & equipment				
Vertical movement				
Horizontal movement				
Working at or below ground				
Working at height				
Integration and conclusion				
Project, case, evaluation				

The strength of shading indicates the approximate extent to which each **Theme** is applicable to each of the four main groups of participants. Individual trainers may have a different view.

Modular course structure

Construction OS&H has been designed on a modular basis so that it can be used in a variety of ways. A generalised timetable for a full-time, five-day course with further explanation given in the table below.

OUTLINE TIMETABLE

This is a basic plan for a five-day full-time course, which suggests a structure of ten modules (morning and afternoon sessions), each of which would require a notional total of four hours of participant effort. In practice it may be necessary to have half (two-hour) modules, as in the Introductory and Concluding modules, and perhaps double (eight hour) modules for site visits and major assignments. Each module would be reasonably self-contained, so could be used, for example, as an evening course offering one module per week for 10 weeks, and in other ways.

	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	FIELD WORK	COMMENTS
Session 1 2 hours Morning	Introductory module	Module B	Module D	Module F	Module H	Ideally, the Module I: Project would be based on an actual, live project, which could include a visit and some information gathering. The timetable would have to be adjusted accordingly.	
Session 2 2 hours Morning	Module A	Module C	Module E	Module G	Module I: Project. Group work		
Session 3 2 hours Afternoon	Module A	Module C	Module E	Module G	Module I: Project. Report & discussion		
Session 4 2 hours Afternoon	Module B	Module D	Module F	Module H	Concluding module		
Session 5 1-2 hours Evening	Social event		Introduce Module I: Project	Possible work on Module I: Project			Evening work is ‘homework’
Operational notes							

The corresponding general modular structure is given in the table below.

General modular structure for a five-day programme			
Module title	Time (hours)	Relevant Themes	Comments
Introduction	2		
A:	4		
B:	4		
C:	4		
D:	4		
E:	4		
F:	4		
G:	4		
H:	4		
I: Project	4 (or 8)	15	8 hours is better
J: Conclusion	2	15	
Modular total (class hours)	40 (44)		

These two general tables have been developed into more specific suggested timetables and modular structures for each of the **Model Courses** for clients, design and project management teams, construction companies and workers, and given in the programme for each. The model courses are in a variety of formats: the courses for clients and design and project management teams are full-time for five-days; the contractors' course is scheduled as one four-hour afternoon session a week; and the workers' course is a two-hour late afternoon session once a week. These examples illustrate the flexibility of the **Construction OS&H** modular structure, formats that are likely to be most acceptable to the course participants and their employers.

Participants' Handbooks

When the participants have completed a course they will have a large collection of course instructions, handouts, PowerPoint presentations, print-offs, exercises, suggested solutions to exercises, suggestions for further reading, and so on. This will be an unwieldy package of documents for further use, so this body of information has been condensed into a **'Handbook'** for their future use.

Participants should be given one of these at the end of their course; there is a Handbook in this format for each of the four Model Course. The Handbooks are also included in digital format as CDs in the Tutors' Guide, so that Tutors can use them to suit their own purposes.

The exception is the Workers' Model course, where it has been recommend that the 'Handbook' should comprise print-outs of the PowerPoint presentations, which, for the reasons given in the Model Course documentation, will be a more suitable reminder for the course participants.

It must be emphasised that, apart from the introduction and some other printed documents, the Model Courses are assemblies of elements of **Construction OS&H** – mainly from the Theme Summaries and Theme PPPs. Generally, there is too much material for the time scheduled. This gives the Tutor a simple task of deleting what is not required for a specific training programme.

8 DELIVERING COURSES BASED ON CONSTRUCTION OS&H

This section gives a few suggestions for running courses.

Pre-course activity

It is useful to have some information about the participants attending a course and their working lives, so a 'pre-course activity', sent to the participants a couple of weeks in advance of the course, can be very useful.

PRE - COURSE ACTIVITY: Occupational Safety & Health (OS&H) survey

AIMS:

To help us to:

- Start to discuss OS&H with the course participants
- Obtain their views on the points listed below
- Make sure that the course is relevant to their working lives

TASK

A. Before you come on the course, have a short discussion with a cross section of people at work. Make a note of their answers to the following questions, and bring your notes along to the course:

- What are the main safety and welfare concerns that they have at work?
- What is your organisation doing to protect health, safety and welfare?
- Can the management of your organisation do more on health, safety and welfare matters?
- Can the trades unions in your organisation do more on health, safety and welfare matters?

B. Try to obtain information that you think will be helpful on the course. For example:

- Safety and health policies
- Safety and health plans for construction projects
- Design guides for safety and health for construction works
- Examples of safety and health contract clauses
- Hazard and risk analyses
- Physical safety precautions (eg safety fencing, personal clothing and equipment)
- Welfare provision on project sites
- Site induction
- Trades union policies on OS&H
- Collective Bargaining Agreements relating to Occupational Safety & Health
- Safety Committee Minutes
- Other information on health and safety you think may be useful

Role of the Tutor

The role of the Tutor is to:

- Ensure that participants develop confidence by creating a climate where they can speak freely
- Introduce and provide background information for each training activity. This will be key points, not lengthy lectures
- Clarify the aims for each activity
- Ensure that each task is understood
- Assist groups without imposing
- Structure reports and discussion
- Help participants to reach clear conclusions before moving on to the next activity
- Motivate participants to carry out practical activities in the workplace

9 THE INTERNET AND THE SHARING NETWORK

Use of the Internet

There is an amazing amount of information relevant to **Construction OS&H** freely available on the Internet, and many educationalists are members of email networks through which they exchange ideas and information.

A good example of a network is the 'collaborative network for building research' (cnbr) through which members receive information daily and who can also engage in worldwide discussion and pose questions for debate. This is a simple email network (cnbr-l@yahoogroups.com) using Yahoo group software, and is 'moderated' voluntarily by academics at a university in Australia.

If **Construction OS&H** is to be credible in the 21st century, it has to establish itself in this new media environment. In simple terms, it has a web site that allows anyone to download all parts of this training resource.

It also provides a means, such as a notice board, whereby participants can continue to communicate with each other and their tutors, sharing knowledge and experiences.

In addition, a network for registered tutors, along the lines of the cnbr, will be provided so that they can share their knowledge and teaching materials and generally help ILO to keep this package up to date.

10 DEFINITIONS FROM THE ILO CODE OF PRACTICE AND THE GUIDELINES ILO-OSH 2001

ILO Code Of Practice

In this code, the following terms have the meanings hereby assigned to them:

Adequate, appropriate or suitable: words used to describe qualitatively or quantitatively the means or method used to protect the worker.
Bearer: see *putlog.*
Brace: A structural member that holds one point in a fixed position with respect to another point; bracing is a system of structural members designed to prevent distortion of a structure.
By hand: The work is done without the help of a mechanised tool.
Cartridge-operated: A device in which an explosive drives a projectile such as a nail or a stud into materials; they are of three types:

(i) *"high-velocity type"*, in which the projectile is driven directly by the gases from the explosive charge;
(ii) *"low-velocity piston type"*, in which the gases from the explosive charge drive a piston which propels the projectile;
(iii) *"hammer-operated low-velocity piston type"*, in which the piston is driven by a hammer blow in addition to the gases from the explosive charge.

Client: Any natural or legal person for whom a project is carried out.
Code of practice: A document offering practical guidance on the policy and standard setting in occupational safety and health for use by governments, employers, workers and any other persons involved in the construction process in order to promote safety and health at the national level and at the level of the enterprise.
Competent authority: A minister, government department, or other public authority having the power to issue regulations, orders or other instructions having the force of law.
Competent person: A person possessing adequate qualifications, such as suitable training and sufficient knowledge, experience and skill for the safe performance of the specific work. The competent authorities may define appropriate criteria for the designation of such persons and may determine the duties to be assigned to them.
Construction: Those activities as defined in paragraph 1.2.1.
Construction site: Any site at which any of the processes or operations described in paragraph 1.2.1. are carried on.
Danger: Danger of accident or injury to health.
Employer:

(i) Any physical or legal person who employs one or more workers on a construction site; and
(ii) As the context requires; the principal contractor, the contractor or the subcontractor.

Guard-rail: An adequately secured rail erected along an exposed edge to prevent persons from falling.
Hazard: Danger or potential danger.
Hoist: A machine which lifts materials or persons by means of a platform which runs on guides.
Ledger: A scaffold member which extends longitudinally and horizontally parallel to the face of a structure, at right angles to the putlogs and which supports the putlogs,

forms a tie between the posts, and becomes a part of the scaffold bracing; ledgers which do not support putlogs are also called stringers.
Lifting appliance: Any stationary or mobile appliance used for raising or lowering persons or loads.
Lifting gear: Any gear or tackle by means of which a load can be attached to a lifting appliance but which does not form an integral part of the appliance or load.
Means of access or egress: Passageways, corridors, stairs, platforms, ladders and any other means to be used by persons for normally entering or leaving the workplace or for escaping in case of danger.
Putlog or *bearer:* A scaffold member upon which the platform rests. In a single pole scaffold the outer end of the putlog rests on a ledger and the inner end rests in the wall; in an independent pole scaffold each end of the putlog rests on a ledger; in an independent pole scaffold a putlog is known as a bearer.
Raker: An inclined load-bearing tube or pole.
Safety extra-low voltage: A nominal voltage not exceeding 42 V between conductors, or, in the case of phase circuits, not exceeding 24 V between conductors and neutral, the no-load voltage of the circuit not exceeding 50 V and 29 V respectively.
Scaffold: Any temporary structure, fixed, suspended or mobile, and its supporting components which is used for supporting workers and materials or to gain access to any such structure, and which is not a "lifting appliance" as defined above.
Sound or good construction: Construction conforming to any relevant standards issued by a national standardising institution or other body recognised by the competent authority, or to generally accepted international engineering practices or other technical standards.
Sound or good material: Material of a quality conforming to any relevant standards issued by a national standardising institution or other body recognised by the competent authority or to generally accepted international engineering practices or other technical standards.
Standard (upright or post): In relation to a scaffold, a vertical or near vertical tube which bears the weight of a scaffold and its load and includes a through tie or a reveal tie; a through tie is a tie assembly through a window or other opening in a wall; a reveal tie is an assembly of a reveal tube with wedges or screwed fittings or pads fixed between the opposing faces of an opening in a wall together with the tie tube.
Toe-board: A barrier placed along the edge of a scaffold platform, runway, etc., and secured there to guard against the slipping of persons or the falling of material.
Transom: A tube spanning across a ledger to form the support for boards forming the working platform or to connect the outer standards to the inner standards.
Worker: Any person engaged in construction.
Workplace: All places where workers need to be or to go by reason of their work and which are under the control of an employer as defined in "employer".

ILO-OSH 2001

In these guidelines, the following terms have the meanings hereby assigned to them:

Active monitoring: The ongoing activities which check that hazard and risk preventive and protective measures, as well as the arrangements to implement the OSH management system, conform to defined criteria.

Audit: A systematic, independent and documented process for obtaining evidence and evaluating it objectively to determine the extent to which defined criteria are fulfilled. This does not necessarily mean an independent external audit (an auditor or auditors from outside the *organization).*
Competent institution: A government department or other body with the responsibility to establish a national policy and develop a national framework for OSH management systems in *organizations,* and to provide relevant guidance.
Competent person: A person with suitable training, and sufficient knowledge, experience and skill, for the performance of the specific work.
Continual improvement: Iterative process of enhancing the OSH management system to achieve improvements in overall OSH performance.
Contractor: A person or an *organization* providing services to an employer at the employer's worksite in accordance with agreed specifications, terms and conditions.
Employer: Any physical or legal person that employs one or more workers.
Hazard: The inherent potential to cause injury or damage to people's health.
Hazard assessment: A systematic evaluation of hazards.
Incident: An unsafe occurrence arising out of or in the course of work where no personal injury is caused.
Organisation: A company, operation, firm, undertaking, establishment, enterprise, institution or association, or part of it, whether incorporated or not, public or private, that has its own functions and administration. For *organisations* with more than one operating unit, a single operating unit may be defined as an *organisation.*
OSH management system: A set of interrelated or interacting elements to establish OSH policy and objectives, and how to achieve those objectives.
Reactive monitoring: Checks that failures in the hazard and risk prevention and protection control measures, and the OSH management system, as demonstrated by the occurrence of injuries, ill health, diseases and incidents, are identified and acted upon.
Risk: A combination of the likelihood of an occurrence of a hazardous event and the severity of injury or damage to the health of people caused by this event.
Risk assessment: The process of evaluating the risks to safety and health arising from hazards at work.
Safety and health committee: A committee with representation of workers' safety and health representatives and employers' representatives established and functioning at *organization* level according to national laws, regulations and practice.
Surveillance of the working environment: A generic term which includes the identification and evaluation of environmental factors that may affect workers' health. It covers assessments of sanitary and occupational hygiene conditions, factors in the organization of work which may pose risks to the health of workers, collective and personal protective equipment, exposure of workers to hazardous agents, and control systems designed to eliminate and reduce them. From the standpoint of workers' health, the surveillance of the working environment may focus on, but not be limited to, ergonomics, accident and disease prevention, occupational hygiene in the workplace, work organization, and psychosocial factors in the workplace.
Worker: Any person who performs work, either regularly or temporarily, for an employer.

Workers' health surveillance: A generic term which covers procedures and investigations to assess workers' health in order to detect and identify any abnormality. The results of surveillance should be used to protect and promote the health of the individual, collective health at the workplace, and the health of the exposed working population. Health assessment procedures may include, but are not limited to, medical examinations, biological monitoring, radiological examinations, questionnaires or a review of health records.

Workers and their representatives: Where reference is made in these guidelines to workers and their representatives, the intention is that, where representatives exist, they should be consulted as the means to achieving appropriate worker participation. In some instances it may be appropriate to involve all workers and all representatives.

Workers' representative: In accordance with the Workers' Representatives Convention, 1971 (No. 135), any person who is recognised as such by national law or practice, whether they are:

> (a) trade union representatives, namely, representatives designated or elected by trade unions or by members of such unions; or
>
> (b) elected representatives, namely, representatives who are freely elected by the workers of the *(organisation)* in accordance with provisions of national laws or regulations or of collective agreements and whose functions do not include activities which are recognised as the exclusive prerogative of trade unions in the country concerned.

Workers' safety and health representative: Workers' representative elected or appointed in accordance with national laws, regulations and practice to represent workers' interests in OSH issues at the workplace.

Work-related injuries, ill health and diseases: Negative impacts on health arising from exposure to chemical, biological, physical, work-organizational and psychosocial factors at work.

Worksite: Physical area where workers need to be or to go due to their work which is under the control of an employer.