

# **Industrial Health and Safety**

## **Lecture 1**

### **Introduction**

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# Course Objective

- **To train students to identify and asses risks in the workplace.**
  - » **To teach students how to take preventative measures for addressing hazards and risks**
  - » **To help students learn about professional & ethical responsibilities regarding safety issues in industry**

# Today's Agenda

- **Course Syllabus**
- **Course Overview**
- **Course Expectations**
- **Course Assessment**

# Course Syllabus

## Keep in mind the following

- » This is an enterprise course module you will be expected to pursue topics on your own.
- » Use the web and other references in addition to text and notes.
- » This is a new interdisciplinary course and is still evolving.
- » Instructor is only a facilitator, the course is a team effort.

# Motivation

- **IHS → an integral part of the expanded domain of the environment**
- **Stricter laws and regulations**
- **Innovative economic instruments, product liability**
- **Product environmental and safety regulations**

# Motivation

- ❑ **Most engineering graduates do not undergo formal training.**
- ❑ **Reduced hazard and risks make for a safer work environment.**
- ❑ **Human consequences of accidents.**
- ❑ **Toxic discharges, Financial burden, Criminal liability.**

# Motivation (*why urgent*)

- Injuries and Fatalities
- Damage Losses and Reimbursement
- Effect on the National Economy
  - » Billions per year

# Syllabus

- Rules, regulations, OSHA, workman's compensation, legal issues, liability, etc.
- The interactions among worker, machine, and environment
- Understanding potential risks/hazards assessment



# What does IHS Involve?

- Understanding engineering principles of processes & system
- Risk avoidance and prevention
- Accident investigation

# ***Health and Safety Standards***

## **□ Federal and State OSHA.**

- » The Federal OSHA is established by federal government.**
- » The State OSHA can impose more stringent regulations according to the industrial activity in that region (e.g. CAL OSHA).**

# ***Health and Safety Standards***

- In addition to these health and safety acts,  
Federal OSHA has created the following:
  - » Toxic Substances Control Act.
  - » Federal Food, Drug, and Cosmetic Act.
  - » Federal Insecticide, Fungicide and Rodenticide Act.
  - » Resource Conservation and Recovery Act.
- An important compliance issue is the MSDS

# Health and Safety Standards Cont'd

**The MSDS forms must be in compliance with  
the provisions in OSHA's "29 CFR  
1910.1200" and most individual State  
HazMat Requirements.**

# Health and Safety Standards Cont'd

Regardless of the format, the information that is required in the MSDS according to OSHA includes:

- » Product Identity
- » Reactivity Hazards
- » Hazardous Ingredients
- » Spill Clean-Up

# Health and Safety Standards Cont'd

(Continued)

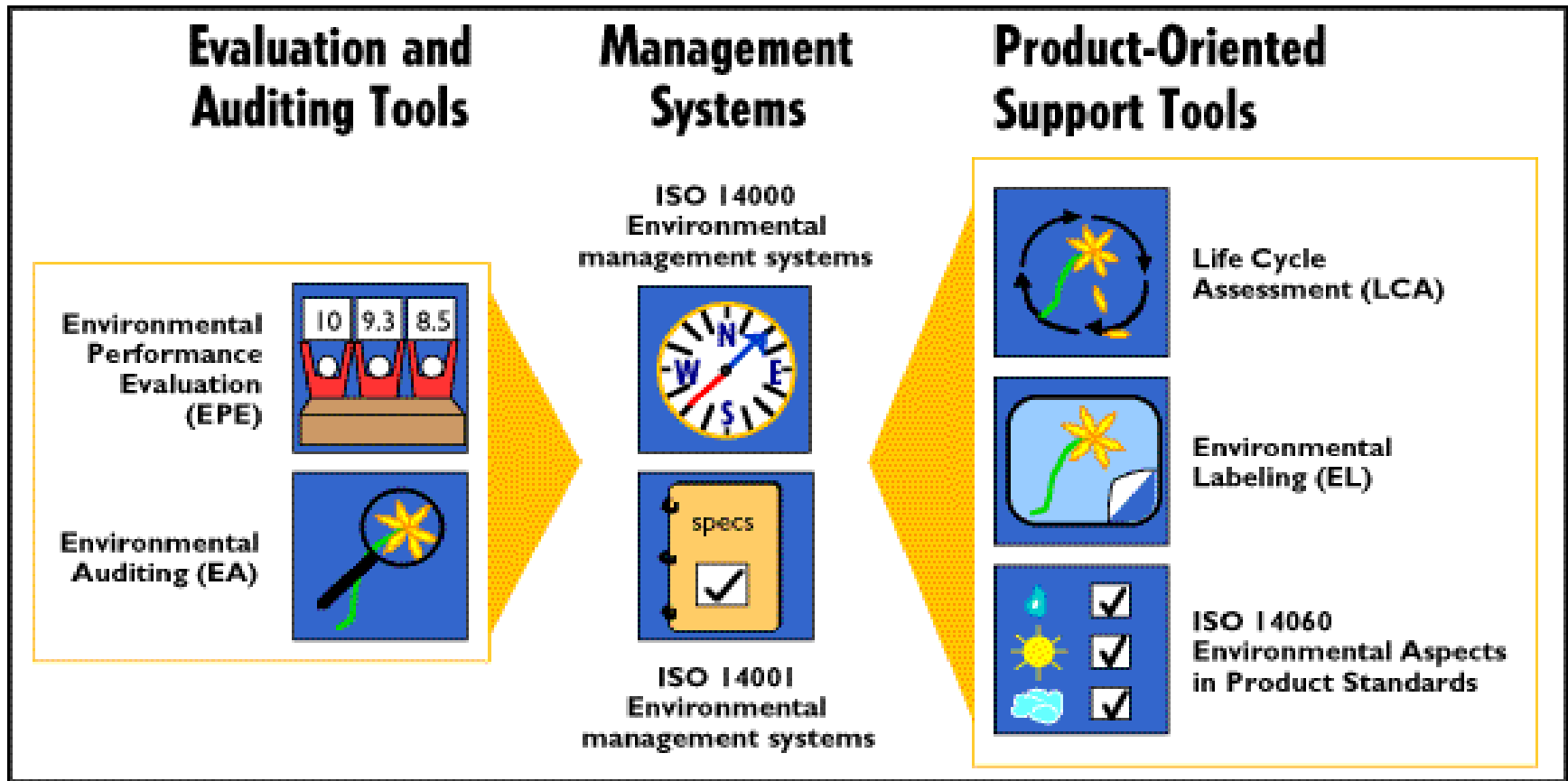
- » **Physical/Chemical Properties**
- » **Protective Equipment**
- » **Fire and Explosion Hazards**
- » **Special Precautions**
- » **Health Hazards**

# **OSHAS 18001**

## **Occupational Health & Safety**

- **The requirements, implications & benefits of OHSA management system.**
- **The interrelationship with ISO9000 and ISO14000**

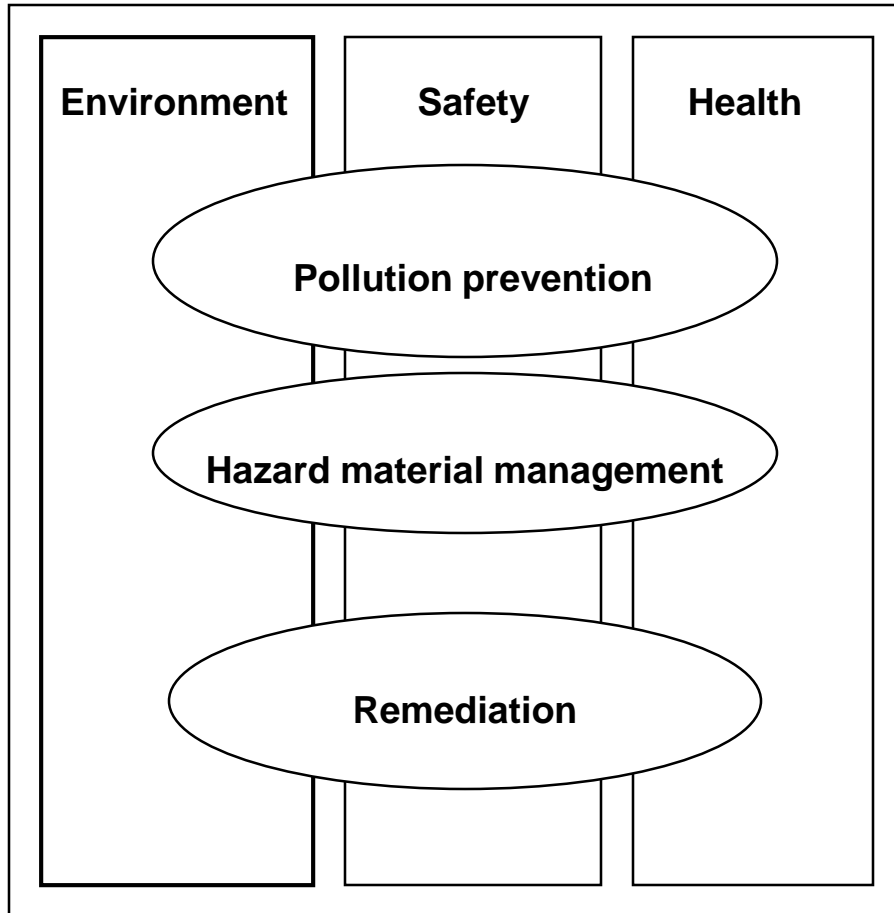
# ISO 14000 Standards Overview



“Roadmap” of the ISO 14000 Series of Standards [Stoller ISO 14000]

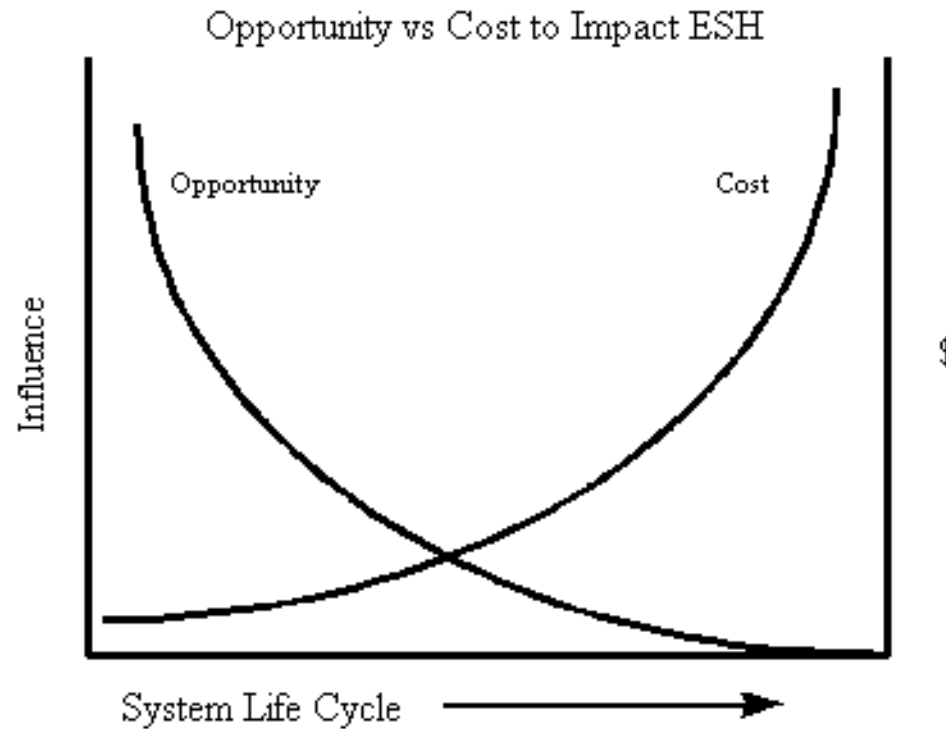


# Environment, Health and Safety



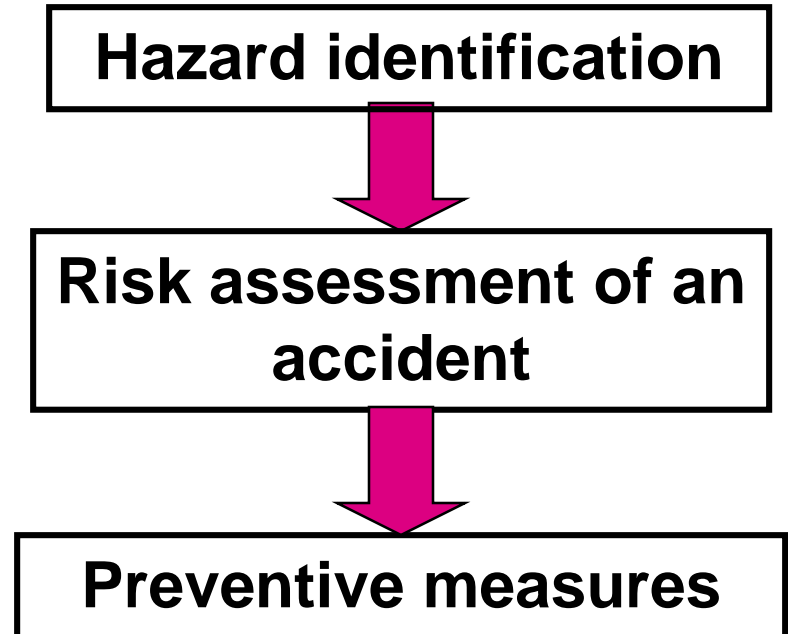
**IHS is very much an integral part of the expanded domain of the environment**

# Environment, Health and Safety



Environmental Safety and Health Influence

# Health and Safety in Your Hands



# Grading

- **Oral Presentation & PPT Slides of Safety Issue**  
**that you have investigated** **50%**
- **Final Written Exam** **50%**