

A 9-week Duration Course

on

Industrial Safety Engineering for Tata Steel Officials  
(May 24 to July 23, 2010)

## **A Brief Outline**

### **Coordinators**

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**1. Title of the programme: A 9-week Duration Course on Industrial Safety Engineering for Tata Steel Officials.**

**2. Background**

Today industries, particularly in India, are facing stiff challenges in meeting the safety and health requirements of the employees and there are reasons for it. First, the changes in work organizations and technologies pose serious problem of workplace accidents. As a result, the employees are subjected to occupational risk of injuries and illnesses to a greater extent. Second, the growing societal demand for better quality of work life in the on-suit of OSHAS18001 and SA8000 made people aware of the situation on a positive note which needs to be satisfied by the employer. Finally, increase in competition from global players in terms of quality, productivity, and safety keeps organizations awakening for their sustainability. Under this changed scenario, industries and organizations in India need to develop and device ways and means to improve their workplace in terms of safety, health and environment.

The movement for improving quality world-wide over the last 100 years shows that suitably educating employees on quality management principles and empowering them for excellence in quality prove excellent result. This can be true for safety improvement too. Industries like Tata Steel believe this which is revealed by their initiatives to strengthen safety systems including safe behaviors of the employees. The lacuna still persists in designing the safety programmes are (i) not inherited in engineering design, (ii) not involved the key process owners, and (iii) not supported by organization. The reason for non-inclusion of these key characteristics is the lack of knowledge and skill to conceptualize safety issues during system design. As such, a course on “Industrial Safety Engineering” is utmost required to train industry professional and stake holders on the various aspects of safety, health and environment.

### 3. Objectives of the Programme

Over the years, scattered attempts have been made in both developed and developing countries for establishing several training programmes and courses on industrial safety engineering. While a few of them offer base level courses on safety engineering and management, majority are involved in offering essentially training and certificate courses on one or two issues of safety engineering. It may be pointed out that many such training programmes, do not possess a adequate holistic approach to address safety problems in organizations. **It is high time that IIT Kharagpur should take a lead in establishing a world-class centre of excellence for education and research in safety engineering and management with the active and sustained support and cooperation from Tata Steel.** This course will serve the following purposes:

- (i) Creating capable human resources in the field of safety engineering,
- (ii) Conducting study/survey on select issues of safety engineering and management at the national and industry levels, and
- (iii) Creating knowledge base in diversified areas, such a hazard identification, risk analysis, reduction, mitigation, and response, system safety analysis, inherent safety design for products and processes, and other essential ingredients of safety engineering and management.

### 4. Eligibility Criteria for Admission

- a) Graduate engineering with work experience are desirable.
- b) Diploma holders with good academic and track records and adequate work experience are also eligible.

5. **Maximum number of participants :** 31

### 6. Duration and contact hours

Duration : 9 weeks  
Contact hours : 6½ hours per day over 5-day week (Monday to Friday)  
Date of Start : May 24, 2010  
Date of completion : July 23, 2010

## 7. Course Curriculum

The entire course content is divided into ten modules. Four modules detail the lecture topics to be covered at IIT Kharagpur and termed as Module at IIT (MIIT 1 to MIIT 4). Three modules detail the cases to be developed by the participants in the plant and termed as Module in Plant (MIP 1 to MIP 3). The cases developed under each of the MIPs will be discussed amongst the participants and IIT team (DMIP 1 to DMIP 3) at the Plant and accordingly be modified by the participants.

## 8. Course Schedule

Sl. No.	Duration (Date From – Date To)	Module	Place
1.	24.05.2010 – 04.06.2010	MIIT1	IIT Kharagpur
2.	07.06.2010 – 11.06.2010	MIP1	Tata Steel, Jamshedpur
3.	14.06.2010 – 25.06.2010	DMIP1+MIIT2	IIT Kharagpur
4.	28.06.2010 – 02.07.2010	MIP2	Tata Steel, Jamshedpur
5.	05.07.2010 – 09.07.2010	DMIP2+ MIIT3	IIT Kharagpur
6.	12.07.2010 – 16.07.2010	MIP3	Tata Steel, Jamshedpur
7.	21.07.2010 – 23.07.2010	DMIP3+ MIIT4	IIT Kharagpur

### MODULE

### PARTICULARS OF THE COURSE

- MIIT1 : Industrial Safety, Quantitative Risk Assessment, System Safety Analysis and Process Safety
- MIP1 : Development of Case Studies at 0-level at worksite group wise / workplace wise
- DMIP1 : Discussion and Evaluation of MIP1 at IIT Kharagpur
- MIIT2 : Mechanical System Design, Reliability, Structural Design, Electrical Safety, Mines Safety and Fire Safety
- MIP2 : Development of case studies at I-level at worksite group wise / workplace wise
- DMIP2 : Discussion and Evaluation of MIP2 at at IIT Kharagpur
- MIIT3 : Ergonomics and Safety, Maintenance and Safety, Process Safety Planning and Management
- MIP3 : Development of case studies at II-level at worksite group wise / workplace wise
- DMIP3 : Discussion and Evaluation for Integration of Case Studies at III-level at at IIT Kharagpur
- MIIT4 : Test and Evaluation, Submission of Project Reports, Presentation and Viva-Voce examination and Closing Ceremony

**LECTURES WILL BE DELIVERED AS PER THE FOLLOWING TIME SCHEDULE**

**Monday to Friday at IIT Kharagpur**

9.30 am – 11.30 am	11.30 am – 11.45 am	11.45 am – 12.45 pm	12.45 pm – 2.30 pm	2.30 pm – 4.30 pm	4.30 pm – 5.45 pm
<b>Lecture</b>	<b>Tea</b>	<b>Lecture</b>	<b>Lunch</b>	<b>Lecture</b>	<b>Quiz/Tutorial</b>