

21CYS08	Risk Management	L	T	P	C
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<u>Course Objectives</u>					
<ul style="list-style-type: none"> To learn about implementation of safety procedures, risk analysis and assessment, hazard identification. 					
UNIT I	INTRODUCTION TO RISK MANAGEMENT	9 Hours			
Risk - Types of Risk – Objectives of risk management – Sources of risk – Risk Identification – Measurement of risk					
UNIT II	RISK AVERSION & MANAGEMENT TECHNIQUES	9 Hours			
Risk Avoidance – Loss Control – Risk retention – Risk transfer – Value of risk Management – Pooling and diversification of risk					
UNIT III	RISK MANAGEMENT TOOLS	9 Hours			
Options – Forward contracts – Future contracts – SWAPS – Hedging – Optimal hedges for the real world.					
UNIT IV	HAZARD IDENTIFICATION AND CONTROL	9 Hours			
HAZOP, job safety analysis – Fault tree analysis – Event tree analysis – Failure modes and effect analysis and relative ranking techniques – Safety audit – Plant inspection – Past accident analysis.					
UNIT V	RISK MANAGEMENT	9 Hours			
Overall risk analysis – Chapains model, E and FI model– Methods for determining consequences effects: Effect of fire, Effect of explosion and toxic effect – Disaster management plan – Emergency planning – Onsite and offsite emergency planning – Risk management – Gas processing complex, refinery – First aids.					
UNIT VI	CASE STUDIES				
Case studies on Risk Management					
TOTAL PERIODS: 45					
<u>Course Outcomes:</u>					
At the end of the course, Students can able to					
<ul style="list-style-type: none"> Carryout hazard identification and accounting, risk characterization and consequence determination, event tree and fault tree modeling and Probabilistic risk assessments. Develop management plans including risk communication and emergencypreparedness planning Plan environmental risk assessment of industries and hazardous activities 					

Text books:

1. Cutter, S.L., Environmental Risk and Hazards, Prentice-Hall of India Pvt. Ltd., New Delhi, 1999.
2. Kolluru Rao, Bartell Steven, Pitblado R and Stricoff, "Risk Assessment and Management Handbook", McGraw Hill Inc., New York, 1996.

Reference Books:

1. Kofi Asante Duah, "Risk Assessment in Environmental management", John Wiley and sons, Singapore, 1998.
2. Kasperson, J.X. and Kasperson, R.E. and Kasperson,R.E., Global Environmental Risks, V.N.University Press, New York, 2003.