CHEMICAL PROCESS SAFETY

PROF. SHISHIR SINHA
Department of Chemical Engineering
IIT Roorkee

TYPE OF COURSE : Rerun I Core I UG
COURSE DURATION : 12 weeks (20 Jul'20 - 9 Oct'20)
EXAM DATE : 17 Oct 2020

PRE-REQUISITES : Chemical Engineering Thermodynamics, Chemical Technology
INTENDED AUDIENCE : All Chemical Engineering students
INDUSTRIES APPLICABLE TO : Useful for all Process industries, Refineries, Fertilizer plants, Petrochemical plants specially for managers and decision makers

COURSE OUTLINE :
As chemical process technology becomes more complex, chemical engineers will need a more detailed and fundamental understanding of safety. The course focuses on understanding the important technical fundamentals of chemical process safety. The emphasis on the fundamentals will help the student understand the concepts and apply them accordingly. This application requires a significant quantity of fundamental knowledge and technology.

ABOUT INSTRUCTOR :
Prof. Shishir Sinha is presently working as Professor and Head in the Department of Chemical Engineering at IIT Roorkee. He has been teaching the courses related to Process Utilities and Safety, Chemical Engineering Thermodynamics and safe operation in Petroleum industries to undergraduate and postgraduate students for more than 12 years.

COURSE PLAN :
Week 1: Introduction to Process safety, Accidents and Loss statistics
Week 2: Toxicological Studies
Week 3: Fire and Explosion
Week 4: Prevention of Fire and Explosion
Week 5: Source model and dispersion
Week 6: Relief and relief sizing
Week 7: Hazard Identification, HAZOP analysis
Week 8: Risk Assessment
Week 9: QRA and LOPA
Week 10: Process of Accident Investigation
Week 11: Reliability Engineering
Week 12: Economics of loss prevention