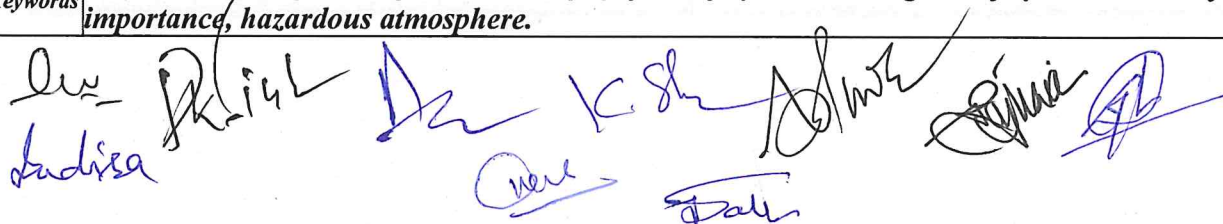


**FOUR YEAR UNDERGRADUATE PROGRAM(2024 – 28)**  
**DEPARTMENT OF INDUSTRIAL CHEMISTRY**  
**COURSE CURRICULUM**

<b>PART-A: Introduction</b>			
Program: Bachelor in Science (Honors/ Honors with Research)		Semester - VIII	Session: 2024-2025
1	Course Code	ICSE-10T	
2	Course Title	INDUSTRIAL SAFETY	
3	Course Type	DSE	
4	Pre-requisite(if,any)	As per program	
5	Course Learning Outcomes(CLO)	<ul style="list-style-type: none"> <li>➤ To understand concept, need, nature, size of safety problem, and importance of safety.</li> <li>➤ To acquire philosophy of safety: accident, oversight, hazard, types of accident, accident prevention and five E's of accident prevention.</li> <li>➤ To acquire safety psychology: factors affecting accidents, behavior based safety, and motivation.</li> <li>➤ To understand and acquire instrumental and electricity safety measures.</li> <li>➤ Handling of fire and explosions.</li> </ul>	
6	Credit Value	3 Credits	Credit = 15 Hours -learning & Observation
7	Total Marks	Max. Marks: 100	Min Passing Marks:40
<b>PART -B: Content of the Course</b>			
Total No.of Teaching-learning Periods(01 Hr. per period) - 45 Periods (45 Hours)			
Unit	Topics(Course contents)		No.of Period
I	Introduction of safety: - Introduction, concept of safety: definition of safety, need for safety, nature of safety, importance of safety, focus on human resources, concept of development, modern concept of SHE or HSE. Problems of industrial safety: Classification, problems of industrial accidents, occupational health and environmental pollution, nature and size of safety problems, factors impeding safety, reasons for accident prevention, place of industry and safety are inevitable, importance of safety		12
II	Machine tool, hand tool and power tool for safety and machine guarding: - Introduction, classification and important aspects of machine tools, hand tools and power tools.		11
III	Electrical safety and static electricity: -Introduction of flammable gases, affected criteria in electrical safety system, introduction of static electricity, ground fault circuit protection, electric work in hazardous atmosphere.		11
IV	Fire and explosion: -Introduction of fire and explosion, elements and classification of fire, and importance aspects of fire and explosion.		11
Keywords	Safety, machine guarding, electrical safety, fire safety, industrial gas safety, accidents, safety importance, hazardous atmosphere.		



Signature of Convener & Members (CBoS):

**PART-C: Learning Resources**

Text Books, Reference Books and Others

Text Books Recommended –

1. Reddy, M. J. (Industrial safety and hazard prevention [4th ed.]). Khanna Publishers.
2. Mahajan, L. M. (Industrial safety management [5th ed.]). McGraw Hill Education (India) Private Limited.
3. Verma, N. K. (Safety in industry). Metropolitan Book Co. Pvt. Ltd.

Reference Books Recommended –

1. Wilson, L., McCutcheon, D., & Buchanan, M. (2003). Industrial safety and risk management. University of Alberta.
2. Heinrich, H. W. (1931). Industrial accident prevention: A manual for industrial executives. McGraw-Hill.
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Online Resources–

- > e-Resources / e-books and e-learning portals
- > [https://onlinecourses.nptel.ac.in/noc24\\_mg52/preview](https://onlinecourses.nptel.ac.in/noc24_mg52/preview)
- > [https://onlinecourses.swayam2.ac.in/nou23\\_ge81/preview](https://onlinecourses.swayam2.ac.in/nou23_ge81/preview)
- > [https://onlinecourses.nptel.ac.in/noc22\\_ce39/preview](https://onlinecourses.nptel.ac.in/noc22_ce39/preview)
- > <https://archive.nptel.ac.in/courses/110/105/110105094/>
- > [https://www.igmpi.ac.in/HSE/Adword.php?gad\\_source=1&gclid=Cj0KCCQjwltKxBhDMARIsAG8KnqXSDtyTJhZZoG5qYbuHpYxiKB6l6ShXdQvIDoL9qur6UKB0SotlCbgaApUPEALw\\_wcB](https://www.igmpi.ac.in/HSE/Adword.php?gad_source=1&gclid=Cj0KCCQjwltKxBhDMARIsAG8KnqXSDtyTJhZZoG5qYbuHpYxiKB6l6ShXdQvIDoL9qur6UKB0SotlCbgaApUPEALw_wcB)

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**PART-D: Assessment and Evaluation**

Suggested Continuous Evaluation Methods:

Maximum Marks: 100 Marks

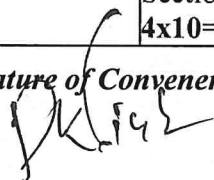
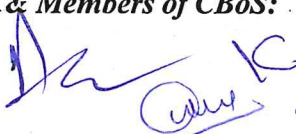
Continuous Internal Assessment(CIA):30 Marks

End Semester Exam(ESE):70 Marks

Continuous Internal Assessment(CIA): (By Course Teacher)	Internal Test / Quiz-(2): 20 +20	Better marks out of the two Test / Quiz+ obtained marks in Assignment shall be considered against 30 Marks
	Assignment/Seminar- 10 Total Marks -30	
End Semester Exam (ESE):	Two section – A & B Section A: Q1. Objective – 10 x1= 10 Mark; Q2. Short answer type- 5x4 =20Marks Section B: Descriptive answer type qts., 1out of 2 from each unit- 4x10=40Marks	

Name and Signature of Convener & Members of CBoS:

Indira



**FOUR YEAR UNDERGRADUATE PROGRAM(2024 – 28)**  
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**COURSE CURRICULUM**

<b>PART-A: Introduction</b>			
Program: Bachelor in Science (Honors/ Honors with Research)		Semester - VIII	Session: 2024-2025
1	CourseCode	CHSE-10P	
2	CourseTitle	INDUSTRIAL SAFETY LAB. COURSE	
3	CourseType	DSE	
4	Pre-requisite(if,any)	As per program	
5	Course Learning Outcomes(CLO)	<ul style="list-style-type: none"> <li>➤ To acquire knowledge about fire incidents, and their management.</li> <li>➤ To acquire knowledge about chemical incidents, management, and importance.</li> <li>➤ To acquire knowledge about lab safety measures.</li> <li>➤ Understanding need, management, and importance of safety.</li> </ul>	
6	CreditValue	1 Credits	Credit =30 Hours Laboratory or Field learning/Training
7	TotalMarks	Max.Marks:50	Min Passing Marks:20
<b>PART -B: Content of theCourse</b>			
TotalNo.of learning-Training/performancePeriods:30 Periods (30 Hours)			
Module	Topics(Coursecontents)		No.ofP eriod
Lab./Field Training/ Experiment Contents of Course	<ul style="list-style-type: none"> <li>• Report/model/project on fire safety.</li> <li>• Report/model/project on chemical safety.</li> <li>• Report/model/project on lab safety.</li> <li>• Visit of an industry and understand safety management and prepare report/project what did the students learn?</li> <li>• Seminar/quiz on safety need, management, and importance.</li> <li>• Safety awareness programs.</li> <li>• Safe handling of typical laboratory instruments.</li> <li>• Incidence response and emergency planning.</li> <li>• Safe handling of industrial gases.</li> <li>• Case studies based on historical lab accident reports.</li> </ul>		<b>30</b>
Keywords	Safety, lab safety, fire safety, chemical safety, management, project, report, seminar, visit, industry/ Gas handling, incidence, emergency.		

**PART-C: Learning Resources**

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- [https://onlinecourses.nptel.ac.in/noc22\\_ce39/preview](https://onlinecourses.nptel.ac.in/noc22_ce39/preview)
- <https://archive.nptel.ac.in/courses/110/105/110105094/>
- [https://www.igmpi.ac.in/HSE/Adword.php?gad\\_source=1&gclid=Cj0KCCQjwltKxBhDMARIsAG8KnqXSDtyTJhZZoG5qYbuHpYxiKB6l6ShXdQvIDoL9qur6UKB0SotI CbgaApUPEALw wcb](https://www.igmpi.ac.in/HSE/Adword.php?gad_source=1&gclid=Cj0KCCQjwltKxBhDMARIsAG8KnqXSDtyTJhZZoG5qYbuHpYxiKB6l6ShXdQvIDoL9qur6UKB0SotI CbgaApUPEALw wcb)

**Online Resources–**

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**PART-D: Assessment and Evaluation**

**Suggested Continuous Evaluation Methods:**

**Maximum Marks: 50 Marks**

**Continuous Internal Assessment(CIA):15 Marks**

**End Semester Exam(ESE):35Marks**

<b>Continuous Internal Assessment(CIA): (By Course Teacher)</b>	Internal Test / Quiz-(2): <del>10</del> <b>10</b> Assignment/Seminar + Attendance- 05 Total Marks -15	Better marks out of the two Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks
<b>End Semester Exam (ESE):</b>	<b>Laboratory / Field Skill Performance: On spot Assessment</b> BB. Performed the Task based on lab. work - 20 Marks CC. Spotting based on tools & technology (written) – 10 Marks DD. Viva-voce (based on principle/technology) - 05 Marks	<b>Managed by Course teacher as per lab. status</b>

Name and Signature of Convener & Members of CBoS:

