# DETAILED SYLLABI OF THE DIFFERENT THEORETICAL & SESSIONAL SUBJECTS OFFERED IN SECOND SEMESTER

# SAFETY, HEALTH & ENVIRONMENTAL LEGISLATIONS

| Subject Code | Course Offered in | Full Marks | Written Test | Internal Assessment | Attendance |
|---|---|---|---|---|---|
| IS-201 | 2nd Semester | 100 | 70 | 20 | 10 |

| Chapter | Content | Hours |
|---|---|---|
| 1 | - ILO Convention and Recommendation concerning Occupational Health and Safety.<br>- Relevant Conventions and Recommendation of ILO in the furtherance of Safety, Health and Environment (SHE). SHE a human right issue. Trade Policy affecting OHS.<br>**Year / Convention / Recommendation**<br>1981 / 155-OHS / 164-OHS<br>1985 / 161-OHS / 171-OHS<br>1988 / 167-Safety & Health in construction / 175-Safety & Health in construction<br>1990 / 170-Chemicals / 177-Prevention of major industrial accidents<br>1993 / 174-Prevention of major industrial accidents / 181-Prevention of major industrial accidents | 12 |
| 2 | **Overview of the Occupational Safety, Health & Working Conditions Code, 2020.** | 10 |
| 3 | **The Factories Act, 1948 (Amended) and Rules**:<br>Factories Act. Provisions under the Act and Rules made there-under withAmendments Case Laws under the Factories Act. | 12 |
| 4 | **Social Security Legislations**:<br>- Workmen's Compensation Act and Rules.<br>- ESI Act and Rules. Contract Labour (Abolition and Regulation) Act.<br>- Public Liability Insurance Act.<br>- Social Accountability 8000 SA-8000. | 8 |
| 5 | **Safety, Health and Environment (SHE) related Important** | 10 |

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| | **Legislation: Salient Features:**<br>- Sections pertaining to SHE.<br>- Indian Boilers Act. 1923 with allied Regulations. Indian Electricity Act, 2000 and Rules, Indian Explosives Act,1984 and Rule. Petroleum Act and Rules. Gas Cylinder Rules. Calcium Carbide Rules. The Insecticides act and Rules<br>- Radiation Protection Rules, Hazardous Material Transportation Rules.<br>- Static and Mobile (Unfired) Pressure Vessel Rules, 1981 as amended in 2000.<br>- The Dock Workers (Safety, Health & Welfare) Act. 1996 and Rules andRegulations.<br>- The Building and other Construction Workers (Regulation of Employment and Conditions of Service) Act. 1996.<br>- Central Building and other Construction Workers (Regulation of Employment and Conditions of Service)Rules, 1998.<br>- The Building and other Construction Worker's Welfare Cess Act. 1996Cess Rules, 1998.<br>- Local building & development laws.<br>- West Bengal Building & other Construction Workers (Regulation of Employment and Conditions of Services) Rules, 2004. | |
| 6 | **Environmental Protection Legislations**<br>- Water (Prevention & Control of Pollution) Act. 1974 and Rules, Air (Prevention & Control of Pollution) Act. 1981 and 1982 and Rules. Motor Vehicles Act. 1988 as amended in 2000. The Central Motor Vehicles Rules, 1989 as amended in 2000. Transport of Hazardous Goods Rules.<br>- Environmental Protection Act. 1986 and Rules. Noise Pollution Act. 1998. Bio-Medical Waste, Hazardous Waste Management Rules.<br>- Chemical accidents (Emergency Preparedness, Planning and Response) Rules, 1986.<br>- Manufacture, storage and import of Hazardous chemicals Rules, 1989. | 8 |

# ENVIRONMENTAL MANAGEMENT & SAFETY PHILOSOPHY

| Subject | | Full Marks | Written Test | Internal | Attendance |
|---|---|---|---|---|---|

| Code | | | | Assessment | |
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| IS-202 | Course Offered in 2nd Semester | 100 | 70 | 20 | 10 |
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| Chapter | Content | Hours |
|---|---|---|
| 1 | **ENVIRONMENT MANAGEMENT SYSTEM**<br>Aspects and Impact of Environment Management.<br>Environmental Policy.<br>Environment Impact Assessment.<br>Process & Methodologies.<br>Administrative Procedure for Environmental Clearance.<br>EMS Audit ISO 14001:015.<br>Guidelines related to Industrial Siting. | 8 |
| 2 | **ENVIRONMENT MONITORING**<br>Principles and practices for monitoring of air pollution, water pollution, environmental noise pollution.<br>Effluent treatment plant – key process.<br>Parameters of Effluent monitored. | 6 |
| 3 | **WASTE MANAGEMENT**<br>Principles and concept of hazardous waste management.<br>Six-R Concept: Rethink, Refuse, Reduce, Recycle, Reuse<br>&<br>reprocessing/co-processing of waste. | 5 |
| 4 | **GLOBAL WARMING**<br>Carbon Emission, Atmospheric gases, Greenhouse gases, Kyoto Protocol, Ozone depleting substances and its impact on environment.<br>Restrictions for development in Coastal Zone as per CRZ Regulations | 5 |
| 5 | **ENERGY CONSERVATION**<br>Key elements of energy management system ISO 50001.<br>Use of clean technologies.<br>Different energy conservation measures | 5 |
| 6 | **SUSTAINABILITY REPORTING**<br>Elements of Sustainability Reports. Purpose and advantages of Sustainability Reporting | 6 |
| 7 | **VISION ZERO: PHILOSOPHY & PRINCIPLES**<br>7 Golden rules & Guidelines<br>Role of Leadership.<br>Global case Studies. | 6 |

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| 8 | **EMPLOYEE PARTICIPATION IN SAFETY**<br>Purpose. Areas of participation. Methods. Role of Trade Union in Safety Health and Environment Protection. Safety Promotion and Safety Awards and Suggestion<br>Schemes. Safety Competitions. Safety Incentives. Publicity Schemes – Audio-visual publicity and other promotional methods. | 6 |
| 9 | **ECONOMICS OF SAFETY**<br>Cost of Accidents: Direct and Indirect cost. Financial costs to individual and family, Organization and society. Cost compilation | 4 |
| | procedures. Utility and Limitation of Cost Data. Budgeting for Safety. | |
| 10 | **SAFETY EDUCATION & TRAINING**<br>Training for Safety: Assessment of training needs – Design and development of Training Programmes – Training methods and strategies – Training of Managers, Supervisors and Workers – Evaluation and Review of Training Programmes. Communication with Senior and Line Management. Ensuring top-level involvement and commitmentto safety training. Safety training promotional activities: In plant training programmes, external training programmes, seminars, conferences and workshops, induction programmes for new entrants. CBT, concept for training. Safety as online function. Use of audio-visual multimedia and information technology in organizing the training on safety | 6 |
| 11 | **DISASTER MANAGEMENT**<br>Disaster from natural calamities affecting Industrial activities. Fire, Flood, Earthquakes and other emergency accident scenarios. Guidelines for meeting Emergencies | 4 |

# CHEMICAL & PROCESS SAFETY IN INDUSTRY

| Subject Code | Course Offered in | Full Marks | Written Test | Internal Assessment | Attendance |
|---|---|---|---|---|---|
| IS-203 | 2nd Semester | 100 | 70 | 20 | 10 |

| Chapter | Content | Hours |
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| 1 | **INTRODUCTION:**<br>Different types of hazards in chemical industries and their precautions - U. N. and other classification for Chemicals - Use of Material Safety Data Sheet – safety in receiving, storing, handling and transportation of chemicals – Compatibility and Considerations – Fulfillment of Statutory requirements for transporting Hazardous/Toxic flammable/ Explosives Cargo, by all modes - Safety in Chemical Industry :- Batch Process and Continuous process - Criteria for the plant to be under MAH unit. Chemical hazards: toxic chemicals, dust, gases, fumes, mists, vapour & smokes – exposure, evaluation. | 10 |
| 2 | **BULK/ISOLATED STORAGES**<br>General consideration – types of storages - atmospheric and pressurized storage vessels – double and single integrated vessels – layout of storages of LPG, Chlorines, Ammonia, reaction vessels etc.<br>- specific reference to bunds, flooring, catch pit, alarms, safety valves etc. - safe entry procedures to confined spaces - Inspection techniques of isolated storages (checklist method) | 8 |
| 3 | **PIPELINE SAFETY**<br>Transfer of chemicals by pipelines – different components and safety devises of pipelines – Pipeline and Instrumentation (P&I) diagram – colour coding – Identification of contents – precautions in breaking pipelines (probable causes of pipeline failure) – integrating of<br>pipelines (pipeline integrity) – maintenance of pipelines - preparation of maintenance schedule - safe operations. | 8 |
| 4 | **PLANNING FOR SAFE PLANT OPERATIONS**<br>Start up and shut down procedures - work permit application –vapour cloud formation hazards and combating suchchemical spillage control procedures.<br>Runway reactions - its control, precaution and prevention. Introduction to specific safety measures in certain Chemical Plants using chemicals, resulting in health disorders which are notified like Fertilizer, Insecticide, Pesticides – Chloro-alkali Explosives. Polymer<br>plants, Toxic releases in them and their engineering controls. | 12 |
| 5 | **RISK ASSESSMENT**<br>Assessment of DOW index - Risk analysis – Dispersion modeling – Probability<br>Criteria (HAZOP, HAZAN). | 4 |
| 6 | **EMERGENCY PLANNING & PREPAREDNESS**<br>Emergency Planning – On site & off Site Emergency Plans for toxic releases, fire and explosions. Emergency Preparedness, rehearsal and exercises. | 4 |

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| 7 | **INSPECTION**<br>Inspection techniques for chemical processes plants, Reaction vessels, Distillation Towers, etc. Checklist for routine checks - Checklist for specific maintenance and breakdown - Checklist for inspection of loading / unloading bay - Checklist Inspections of Compressor, Pumps etc. Asserting reliability of vessels - test checks. Corrosion location - causes – prevention inspection. Crushing Coring<br>– locations and causes<br>– prevention and inspection. | 6 |
| 8 | **PRINCIPLES OF RELIABILITY ENGINEERING**<br>Principles of Reliability Engineering – Application of Reliability – Engineering, Concepts of critical equipment and devices. | 3 |
| 9 | **CASE STUDIES**<br>Case of studies of some major accidents, viz. Fluxborough disaster, Seveso disaster,<br>Bhopal Gas tragedy etc.Safety Audit – evaluating risks in chemical Processes<br>– Engineering control of Chemical Contaminants. | 4 |

# SAFETY IN CONSTRUCTION INDUSTRY

| Subject Code | Course Offered in 2nd Semester | Full Marks | Written Test | Internal Assessment | Attendance |
|---|---|---|---|---|---|
| IS-204 | | 100 | 70 | 20 | 10 |

| Chapter | Content | Hours |
|---|---|---|
| 1 | **Meaning and Scope of Safety in Construction**<br>Basic philosophy peculiarities and parameters governing the safety in construction such as site planning and layout, safe access, good housekeeping.<br>Accident and hazards – their causes and effects to be changed as Potential construction hazards (physical, chemical, biological, ergonomic). Major causes of accidents. Accident and hazards their causes and effects. | 4 |
| 2 | **Safety in Construction Operations**<br>a) Underground Works : Excavation, drilling and blasting prematic, trenching, shorting porklain type of shorting, strutting, tunnelling, piling and safety in using and operating machinery and equipment relating to the above works. Foundations: Plant & Machinery and Structure.<br><br>b) Above Ground Works : Scaffolding, shuttering / form work, ladders, concrete. Safety in use and portion of related machinery and equipment. Safety on working on fragile roof. Working at Heights.<br><br>c) Underwater portions: Well sinking, caissons underwater concreting, cofferdams and special operations connected with irrigation work. Safety in use of machinery and equipment related to underwater portions.<br><br>d) Movements of Construction Machinery & Materials : Heavy /Long Items, Earth Movers equipment Railway wagons, motor trucks. Materials Vehicles etc. Hazardous Materials, Material handling equipment.<br><br>e) Special Works : High rise buildings, bridges and tunnels, roads, railways, asphalting, pneumatic caissons, electrical installations and bills.<br><br>f) Safety in Prevention and Protection at Work. Site including the collapsing of the structure.<br><br>g) Blasting Operation Related Safety (including Handling, Storing of Explosives Related Safety): Hazards involved and Safety Precautions. Safety in Demolition Operations – Planning and Permit; precautions prior to demolition, protection of the public, precautions during demolition, sequence of demolition operations | 20 |

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| | from safety point of view. Temporary installation and structures. | |

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| 3 | **Safety in Stacking, Storage and Transport of Construction Materials**<br>● Reinforcements<br>● Cement<br>● Sand<br>● Aggregates<br>● Chemicals<br>● Organic binders<br>● Gas Cylinders<br>● Others.<br><br>General considerations for stacking and storage – Planning for Storage Layout, protection against atmospheric agencies, protection against fire and other hazards. | 10 |
| 4 | **Safety in Use of Construction Machineries & Equipment:**<br>Hazards involved, safety devices and precautions to be taken for:<br>● Batching plant<br>● Mixers<br>● Earth Moving equipment<br>● Cranes<br>● Pile driving equipment<br>● Excavators<br>● Drilling equipment<br>● Welding equipment<br>● Gas cutting equipment<br>● Grinding equipment<br>● Derricks<br>● Compressors<br>● Crushers<br>● Layers.<br><br>Hot Mix Asphalt Plant Operation:<br>Asphalt cement (compost)/mastic asphalt. Asphalt melting equipment; Rolled asphalt concrete; Mobile asphalt layers and finishes asphalt pavers (wheel type); Asphalt plant compactor; Asphalt recycler equipment.<br><br>Hand Tools, Portable and Hydraulic Tools:<br>Common causes of accidents, safe practices; Inspection, maintenance and repair of tools; detectable causes of tool failures. Redressing of tools.<br><br>Hand Tools: Safe use of hammers, hand saw, chisel, axe and hatchets, punches & pins, snips, screw drivers, hand planes, plumb bob, crow bar.<br><br>Cutting Hand Tools: Rod and Bar cutters, Bolt cutters, Manual Rebar shears, Wrenches, Pliers, Pipes, Clamps, Vice etc.<br><br>Power Tools: Type of injuries; Earthing, Use of RCCB, ELCB, Double insulated tools, Electric cords and plugs, Safe use of electric drill, Drill presses, Power saw, Portable grinder, Electric/Hydraulic shear and cutter, Electric/hydraulic benders etc. | 14 |

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| 5 | **Special Construction Operations**<br>Special Operations<br>● Transmission Towers<br>● Railways | 6 |
| | ● Power Plants<br>● Transformer Installations | |
| 6 | **Working at Heights and Prevention of Falls of Persons**<br><br>High incidence of serious accidents in working at heights – Types of operations – Planning operations – Safety features associated with Construction, Design and use of gangways, floors, ladders of different types, scaffolds of different types including Boatwain's Chain and Safety belts – other safety requirements while working at height – Prevention of falls of persons at floor level – Potential tripping slipping hazards.<br><br>Prevention from falling of materials; Safety on working on fragile roof; Mobile elevated working platforms. | 8 |

# FIRE SAFETY MANAGEMENT

| Subject Code | Course Offered in | Full Marks | Written Test | Internal Assessment | Attendance |
|---|---|---|---|---|---|
| IS-205 | 2nd Semester | 100 | 70 | 20 | 10 |

| Group | Content | Hours |
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| A | **BASIC PHYSICS & CHEMISTRY OF FIRE**<br><br>Definition of Fire, Fire Triangle, Fire Tetrahedron, Chain Reaction, Classes of Fire<br>Essential Prerequisites of Fire; Basic Elements of Fire and their Properties. Spread of Fire, Stages of Fire, Source of Ignition, Common Causes of Fire, Methods of extinguishing Fire; Smoke and its Effect, Fire Load.<br><br>**ANATOMY OF FIRE**<br><br>Combustion, Elements & Factors involved in Combustion, Combustion Toxicology; Flame, Smoke, Heat, Toxic gases; Flash point, Fire point, Ignition temperature; Techniques of Fire Extinction – Smothering, Cooling, Starvation and Chain Breaking Mechanism (CBM).<br><br>**FIRE RISK IN FLAMMABLE LIQUIDS, GASES & DUST**<br><br>Flammable Liquids:- Name, Physical properties; Classification of Flammable & Combustible Liquids; Hazard classification of Flammable Liquids; Extinguishing Media and Methods of application; Vapour Density; Classification of Gases by Chemical properties, Physical properties; Dust & dust Explosion. | 12 |

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| B | **ELECTRICITY AND FIRE RISKS**<br>Common causes of Electrical Fire & its remedial measures, Electrical Hazards including Static Electricity; Electrical Circuits, Electrocution & Protective measures; Electrical safety and use of Electrical equipment in hazardous areas.<br><br>**BUILDING CONSTRUCTION & FIRE**<br>Importance of Fire Safety in buildings, Building materials and their behavior under fire conditions; Classification of Buildings as per NBC part IV (Fire & Life Safety), 2016;<br>Symptoms of Building Collapse; Smoke movement in building; Fire safety requirement in different groups of buildings; Means of Escape.<br><br>**FIRE FIGHTING AGENTS & APPLIANCES**<br><br>Water: Physical properties, Extinguishing properties.<br>Foam: Types of Foam, Properties of Foams and Techniques of Extinguishment by Foam;<br>High Expansion & Low Expansion Foam; Foam making equipment.<br>Carbon Dioxide: Properties, Extinguishing mechanism.<br>Dry Chemical Powder: types & Uses.<br>Fire Fighting Equipment: Portable Fire Extinguisher: Importance, Types of Extinguishers,<br>Methods of operation of different types fire extinguishers<br>Fire Tender: Various types of Fire Tenders.<br>Fire Service Equipment: Pumps & Primers; Hose & Hose Fittings: Classification, Types;<br>Cooling System, Working Principles, Methods of Operation; Care & Maintenance; Small & Special Gears.<br>Ladders, Ropes & Lines: Types of Ladder: Operational use; Care & Maintenance; Types &<br>Uses of Lines; Methods of Inspection & Testing; Care & Maintenance of Ropes & Lines. | 20 |
| C | **FIRE PROTECTION AND CONTROL TECHNIQUES**<br>Fire Hydrant Systems and Water Supply: Types & Components of Hydrant, Operational functions; Wet Riser, Dry Riser, Down Comer, Flow Gauging. Hydraulics and Water Relay: Pressure & Head; Pressure & flow; Nozzle's Discharge; Types of Water Relay.<br>Automatic Fire Detection Systems: Types of Detectors – Smoke, Heat, Flame/Gas Detectors; Operating Principles; Automatic Fire Alarm Systems; Fire Detection Alarm Systems; types of Sprinklers and their operating principles; Fire Suppression System.<br>Breathing Apparatus: Types of B.A. Sets in use; Working Principles and Care & Maintenance; Fire Proximity and Approach Suits. | 14 |
| D | **FIRE AND LIFE SAFETY EDUCATION & TRAINING**<br>Human behaviour in fire situation; On Site Emergency Plan; Public | 14 |

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| | Fire & Life Safety Education & Training Methods.<br>Medical First Aid: Definition of First Aid; Duties of First Aider; First Aid tools; Fire Incidents;<br>Burn & Scalds - Symptoms & Management; Wounds & Haemorrhage; Bleeding & Infection; Causes & Types of Fractures; Sprain & Dislocation; Artificial Respiration; CPR;<br>Injuries – Classification, Symptoms & Management; Snake Bite & its Management.<br>Principles of Disaster Management: Objectives; Classification – Natural & Man-made Disaster; Elements; National Policy on Disaster Management. | |
| E | **Visit to Fire Station for First-hand Training:**<br>Fire tender and its Operation.<br>Practical fire fighting demo using extinguishers.<br>BA Set & Rescue Operation.<br>Emergency Methods & Rescue. | 10 |

# SAFETY ENGINEERING LABORATORY

| Subject Code | Course Offered in | Full Marks | Internal Assessment | External Assessment | Period |
|---|---|---|---|---|---|
| IS-206 | 2nd Semester | 50 | 25 | 25 | 45 |

Experiments:-

1. Measurement of illumination level by Photo Meter.
2. Assessment of Heat Stress in Work Environment.
3. Measurement of number of air changes in a room by Velometer.
4. Measurement of Sound Levels.
5. Plotting of an Audiogram by Audiometer.
6. Determination of concentration of inflammable vapours.
7. Measurement of Static Charge / Electricity with the help of Static Charge Meter.
8. Determination of Fire Load in a given work place.
9. Measurement of Vibrations of Machines and equipment.
10. Measurement of Insulation Resistance.
11. Continuity test for Electrical circuits.
12. Earthing continuity test.

**SUGGESTED EQUIPMENT FOR THE SAFETY ENGINEERING LABORATORY FOR ADIS COURSE:-**

| **SUGGESTED EQUIPMENT FOR THE SAFETY ENGINEERING LABORATORY FOR ADIS** | **Number of Tools / Equipments (for 30 students group)** |
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| **COURSE:-** | |
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| 1. Digital Anemometer – Wind Speed Range: 0~30 m/s; Wind Temp.: 10~45 C; Make: Benetech. | Two (02) nos. |
| 2. Gas Leak Detector – Response Range: 50 PPM – 1000 PPM (Methane); Sensitivity: >50 PPM; Warm Up Time: About 30 Secs; Response Time: <=500 PPM: Approx 5 secs,>=500 PPM: Approx 2 secs.; Make: HTC Instruments. | Two (02) nos. |
| 3. Lux Meter (Digital) – Ranges: 200, 2000, 20000, 200000 LUX; Sampling Rate: 2 Times/s; Sensor: Photo Diode &Filter.HTC Instruments. | Two (02) nos. |
| 4. Sound Level Meter - Measuring Range: 30~130Dba; Frequency: 31.5 Hz~8 KHz.; Resolution: 0.1dB; Working Temperature: 0~4 C.; 10~80%RH. Premium Calibration Services. | Two (02) nos. |
| 5. Multimeter (Digital) – Operating Condition: 600V CAT IV and 1000V CAT III; Height: Under 2000m; Storage Temperature: 10-60 C; Working Temperature: 0 – 40 C; Conversion Rate: About 3s/second. | Two (02) nos. |
| 6. Vibration Meter - +/-%%+2 digits; 10Hz – 10KHz; with all probes and with auto power off arrangements; Make: HTC. | Two (02) nos. |
| 7. Static Charge Meter/Flash Point Tester - +/-10KV, +/-30 KV/100V; Resolution: 100 V; Digital Display; Make: ELTECH. | Two (02) nos. |
| 8. Megger Analogue Insulation Tester – Test Voltage: 240V; Test Current: 12 amp; Accuracy: 1000/2000. Make: NRJ Electric Company, New Delhi. | Two (02) nos. |
| 9. Fire Extinguishers: Water, CO2, ABC type. | Two (02) nos. of each type |
| 10. Fire Alarm. | Two (02) nos. |
| 11. Hose pipe with nozzle and attachments. | Two (02) nos. |
| 12. Fire Ladder. | Two (02) nos. |
| 13. Fire Stretcher. | Two (02) nos. |
| 14. SCBA Set. | Two (02) nos. |

# INDUSTRIAL PROJECT

| Subject Code | Course Offered in | Full Marks | Internal Assessment | External Assessment | Period |
|---|---|---|---|---|---|
| IS-207 | 2nd Semester | 100 | 50 | 50 | 45 |

Any one of the following has to be performed:

1. Safety audit
2. HAZOP study
3. Preparation of emergency plan
4. Design of management information system
5. Assessment of fire & explosion potential and their prevention
6. In-plant safety inspection
7. Preparation of safety report.

**SUGGESTED BOOKS FOR THE ADIS COURSE**:-


1. A Textbook on Engineering Mechanics, By R.S. Khurmi, S. Chand & Co. Ltd., New Delhi.
2. The Factories Act, 1948 with The West Bengal Factories Rules, 1958 (as amended up to date), By Prasun Kumar Ray, Tax & Law, Kolkata.
3. The Building & Other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996, By Prasun Kumar Ray, Tax & Law, Kolkata.
4. The Occupational Safety, Health and Working Conditions Code, 2020, Ed. By Editorial Board, Tax & Law.
5. The Explosives Act, 1884, Bare Act, Commercial Law Publishers (India) Pvt. Ltd.
6. The Code on Wages, 2019, Bare Act, Commercial Law Publishers (India) Pvt. Ltd.
7. The Industrial Relations Code, 2020, Bare Act, Commercial Law Publishers (India) Pvt. Ltd.
8. The Code of Social Security Bare Act, Commercial Law Publishers (India) Pvt. Ltd.ty, 2020. Bare Act, Commercial Law Publishers (India) Pvt. Ltd.
9. The Insecticides Act, 1968, Bare Act, Commercial Law Publishers (India) Pvt. Ltd.
10. The Environment (Protection) Act, 1986, Bare Act, Commercial Law Publishers (India) Pvt. Ltd.
11. The Petroleum Act, 1934, alongwith The Petroleum Rules, 2002, Bare Act, Commercial Law Publishers (India) Pvt. Ltd.
12. The Water (Prevention and Control of Pollution) Act, 1974, Bare Act, Commercial Law Publishers (India) Pvt. Ltd.
13. The Air (Prevention and Control of Pollution) Act, 1981, Bare Act, Commercial Law Publishers (India) Pvt. Ltd.
14. The Public Liability Insurance Act, 1991, Bare Act, Commercial Law Publishers (India) Pvt. Ltd.
15. The Electricity Act, 2003 alongwith Allied Rules & Regulations, Bare Act, Commercial Law Publishers (India) Pvt. Ltd.
16. The Central Motor Vehicles Rules, 1989, Bare Act, Commercial Law Publishers (India) Pvt. Ltd.
17. Labour & Industrial Laws, Universal Publishers, 2023. Bare Act, Commercial Law Publishers (India) Pvt. Ltd.
18. A Treatise on Indian Boiler Regula Pvt. Ltd.tions, 5th Ed., 2021, by D. S. V. Gupta, Commercial Law Publishers (India)
19. Electrical Safety, Fire Safety Engineering and Safety Management, By S. Rao & Prof. H. L. Saluja. Khanna Publishers, Delhi.
20. Construction Safety, By R. K. Mishra, Allied Publishers, Delhi.
21. Principles of Management, By P.C. Tripathi & P. N. Reddy, The McGraw Hill Company.
22. Organizational Behaviour By Stephen P. Robbins, Prentice Hall of India, New Delhi, 2004.
23. Occupational Health and Hygiene in Industry, By Raja Sekhar, BSP Books Pvt. Ltd.
24. Ergonomics for the Prevention of Musculoskeletal Disorders: Guidelines, By U. S. Dept. of Labour.
25. A Fresh Take on Ergonomics: Avoiding Pain in Workplace, By Betsy Oldenburg, iUniverse Publications.
26. Occupational Health Management, byR.K.Mishra, AITB Publishers, India.
27. Handbook of Occupational Safety and Industrial Psychology, by S.P. Rana, P.K. Goswami & Dr. Indu Rathee, S. Chand Publications, Delhi.
28. Industrial Safety Management, by L.M. Deshmukh, McGraw Publications.
29. Safety, Health & Environment Handbook, by K.T. Narayanan, McGraw Hill Education.
30. Environmental Law, by Dr. Paramjit S. Jaswal & Vibhuti Jaswal, Allahabad Law Agency.

31. Introduction to Environmental Engineering and Science, by Gilbert M. Masters, Prentice Hall of India Pvt. Ltd., New Delhi.
32. Industrial Safety, Health and Environment Management Systems, by R. K. Jain & Sunil S. Rao, Khanna Publishers, Delhi.
33. Environmental Pollution – Monitoring and Control by S.M. Khopkar, New Age International Publishers, New Delhi.
34. Environmental Studies by Benny Joseph, McGraw Hill Education (I) Pvt. Ltd.
35. Fundamentals of Environment by Mahua Basu & S. Xavier, Cambridge University Press, New Delhi.
36. Principles of Fire Safety Engineering, by Akhil Kumar Das, Prentice Hall Publishers.
37. Fire Protection and Prevention: The Essential Handbook (Revised & Updated Edition), by B.M. Sen, UBSPD, New Delhi.
38. A Handbook on Industrial Safety & Fire Management, byRavi Kant Pandey, Chetan Prakashan.
39. Manual of Fire Safety, by N. Sesha Prakash, CBS Publishers & Distributors Pvt. Ltd.
40. Handbook on Fire and Life Safety in Buildings, by B. M. Sen, Techno World.