

Generic Elective

Offering Department: Department of Chemistry

Semester-V

(From AY 2016-17 onwards)

16UCHGE01	Chemical Hazards and Safety	2 Hrs./Week	2 Credits
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Unit.1 Hazards identification and overview:: (5 Hrs.)

Physical Hazards: Electrical, Fire/explosion, Noise, Radiation, Thermal stress, Slips/falls, Striking against, Struck by

Chemical Hazards: Inhalation, Skin contact, Absorption, Injection, Ingestion

Biological Hazard: Blood borne pathogens, Brucellosis, Building-Related Illness (BRI), Legionnaires' Disease, Mold, Plant and insect poisons, Tuberculosis (TB), Water and wastewater

Unit.2 Types of Chemical Hazards: (5 Hrs.)

Compressed gases, flammable and combustible, chemicals, corrosive chemicals, poisons/toxins, oxidizing chemicals, reactive materials

Identifying Chemical Hazards: Types of hazard symbol & color, Material Safety Data Sheets, Labels & Pictograms.

Unit.3 Forms of Chemical Hazards: (4 Hrs.)

The hazard from exposure to a chemical, various forms of chemical hazards- aerosols, gases and vapors, solid, liquid, exposure routes, exposure limits.

Unit.4 Health Hazards of Common Chemicals: (5 Hrs.)

Household Chemicals: air fresheners, ammonia, Antifreeze, Household bleach, drain cleaners, laundry detergent mothballs, motor oil, oven cleaner, rat poison, insect repellent windshield wiper fluid

Laboratory Chemicals: asbestos, silica, lead, carbon monoxide, isocyanates, hydrogen sulfide, benzene

Unit.5 Controlling Chemical Hazards:

(5 Hrs.)

Proper labeling, Chemical Compatibility, Storage & Transportation of Flammable, Combustible & corrosive Chemicals, Personal Protective equipments, Chemical Manipulation, Disposal/Recycling

Books Recommended:

1. Short Guide to the Safety, Health and Welfare at Work (Chemical Agents) Regulations, 2001
2. OHS Body of Knowledge Chemical Hazards 2012, ISBN: 978-0-9808743-1-0
3. National Academies, Handling and management of chemical hazards, 2011: ISBN-13: 978-0-309-13864-2 (hardback)
4. Hazards Chemicals Handbook second edition, Phillip Carson, Clive Mumford, ISBN 0-7506 4888- 0