



UNIVERSITI TEKNOLOGI MARA

CHM423: CHEMISTRY LABORATORY SAFETY

Course Name (English)	CHEMISTRY LABORATORY SAFETY APPROVED
Course Code	CHM423
MQF Credit	2
Course Description	This is an introductory chemistry laboratory safety course providing a foundation on the general safety guidelines to ensure a safe environment while working in the laboratory.
Transferable Skills	Aware of their safety and others in the Chemistry Laboratory.
Teaching Methodologies	Lectures, Blended Learning, Case Study, Discussion, Presentation
CLO	CLO1 Explain the safety culture in improving safe lab activities, decreasing accidents and injuries in the laboratory. CLO2 Communicate with the safety language (GHS symbol and SDS), potential hazard and also safe practice culture in the laboratory.
Pre-Requisite Courses	No course recommendations
Topics	
1. Safety and Safety Awareness 1.1) Definition of safety, accident, hazards and risks 1.2) The principles of safety : student safety ethic 1.3) Some accidents of the past and lessons to be learnt 1.4) Safety awareness policy and training	
2. General Safety Rules 2.1) Safety rules for the chemistry laboratory: do's and don'ts Language of safety: Signs, symbols and labels 2.2) Handling of basic laboratory equipment : glassware 2.3) First aid and emergency procedures	
3. Potential Hazards in Chemistry Laboratory 3.1) Chemical hazards from toxic, flammable, corrosive, reactive and unstable chemicals, high pressure system 3.2) Electrical hazards 3.3) Radiation : ionizing and non-ionizing radiation	
4. Safety and Personal Protective Equipment (PPE) 4.1) PPE – examples -Goggle, lab coat, gloves, shoes, respirator. 4.2) Safety equipments – fire extinguisher, safety shower, eye wash, first aid kit, fire alarm, exit door.	
5. Occupational Safety and Health Act (OSHA)1994 5.1) Introduction to the aims and objectives of OSHA. 5.2) Relevant regulations to OSHA.	
6. Safety Data Sheet(SDS) 6.1) Introduction to Safety Data Sheet (SDS) and it uses 6.2) Interpretation of SDS.	
7. Chemical Management : Inspections, Storage and Wastes 7.1) Handling chemical wastes 7.2) Storing flammable and corrosive liquids 7.3) Chemical inventories and storage	

Assessment Breakdown	%
Continuous Assessment	50.00%
Final Assessment	50.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	One assignment	20%	CLO2
	Quiz	One Quiz	10%	CLO2
	Test	One Test	20%	CLO1

Reading List	Recommended Text	<ul style="list-style-type: none"> Robert H. Hill, Jr. , David C. Finster 2010, <i>Laboratory Safety for Chemistry Students by John Wiley & Sons</i>
	Reference Book Resources	<ul style="list-style-type: none"> Thomas, Charles E., 2007, <i>Safety, Health and Environment for Process Technicians</i>, second Ed. Goetsch, David L. 2005, <i>Occupational Safety and Health for Technologists, Engineers and Managers</i>, 5th Ed., Pearson Prentice Hall
Article/Paper List	Reference Article/Paper Resources	<ul style="list-style-type: none"> Occupational Safety and Health Act 1994
Other References	This Course does not have any other resources	