

# General Instructions

CHM101

Undergraduate Chemistry Laboratory  
(Virtual Mode)



# First Course Handout

**Course Portal:** <https://hello.iitk.ac.in/course/chm101a2122>

## ❑ Instructors:

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## ❑ Tutors: 16

## CHM101A Tutor Assignment

S. No.	Name of the Tutor	Roll No.	E- mail	Section Allotted
1	Ankita	18207276	ankitasa@iitk.ac.in	D8
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# First Course Handout

- ❑ **Evaluation:** Evaluation of students will be performed based on laboratory reports, quiz and end semester examination.

	<b>Weightage</b>
<b>Lab Reports</b>	<b>50%</b>
<b>Quiz</b>	<b>25%</b>
<b>End Semester Exam</b>	<b>25%</b>

# First Course Handout

- ❑ Every Monday material related to a laboratory experiment will be uploaded in <https://hello.iitk.ac.in/course/chm101a2122>.
- ❑ The same experiment will be discussed in the online session every Thursday from 4:00 – 5:00 PM.
- ❑ To join the discussion hour use the following recurring Zoom link  
<https://iitk-ac-in.zoom.us/j/96789098219?pwd=UHZhaVFiTUljYUNXWkhxTjdraVdKQT09>  
Meeting ID: 967 8909 8219; Passcode: 465464
- ❑ Attendance in the online discussion session is mandatory.

## Important Note

- ❑ Both the End-Semester Exam and Quiz are compulsory to complete the course requirement.
- ❑ Students are required to submit a lab report for the experiments taught every week. The lab reports of each experiment will be due within a week from the date of the online discussion. An assignment will be created for the submission of each lab report on the Hello IITK portal.
- ❑ Marks will be deducted for late submission of each lab report (20% for each lab report).
- ❑ Makeup exams/prorating for Quiz and End-Semester examination will only be allowed for cases for which an approved medical leave is obtained from DOAA/SUGC.

# **General Safety Instructions**

# Before entering lab

- Wear a **lab coat**
- Use **covered footwear (shoes, sneakers)**
- Wear **goggles**
- Do not use **slippers, flip flops, high heeled** open shoes
- Avoid clothes with **synthetic fibers like nylon, polyester etc.** in the lab
- Avoid **loosely bound cloth pieces**: for example **shawl**
- Tie **loosely bound hair**

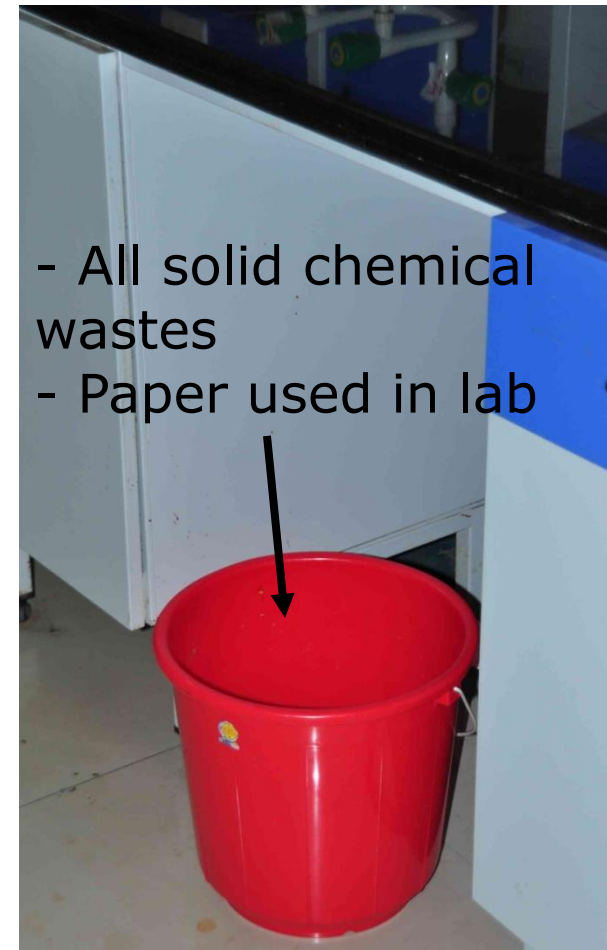




# In the lab..

- Locate the **fire buckets/extinguishers, fire blankets and emergency exits**
- Make sure that all **emergency exits are kept opened**
- Make sure all **exhaust fans are running**

# Chemical wastes



**No chemical  
waste here**



# To avoid fire

- Do **not keep organic solvents** near Bunsen burner
- Do **not use paper/strips** to light Bunsen burner, use the lighter provided
- Do **not keep paper/clothes** on working table
- Do **not throw burnt/half burnt paper** in the dust bin
- Do **not light anything** except Bunsen burner

Please consult lab assistants before doing anything unknown



# In case of fire on clothes or body

- Do **not use fire extinguishers**
- Drop **to the ground and roll** to put the flames out
- Run to the nearest **emergency exit**
- Use **emergency shower** at the inner courtyard
- Do **not cover** if there is wound
- Take **medical care**, Health center Ph. **7777 or 7666**
- People **who witness the fire**, inform the instructors by **Shouting**

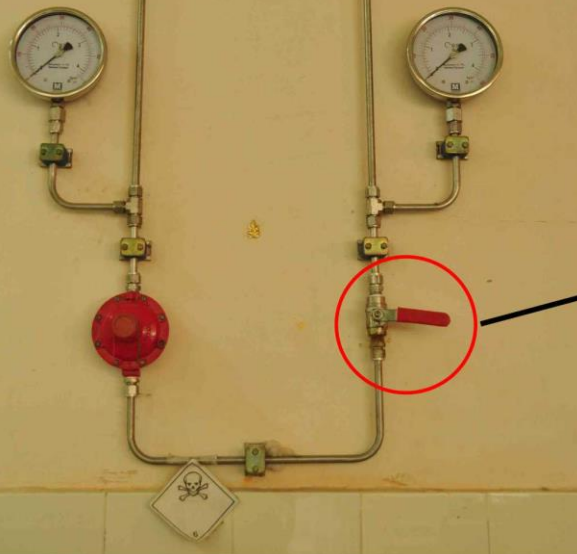
# In case of fire in lab

- Use the **fire extinguishers/- buckets/-blanket**

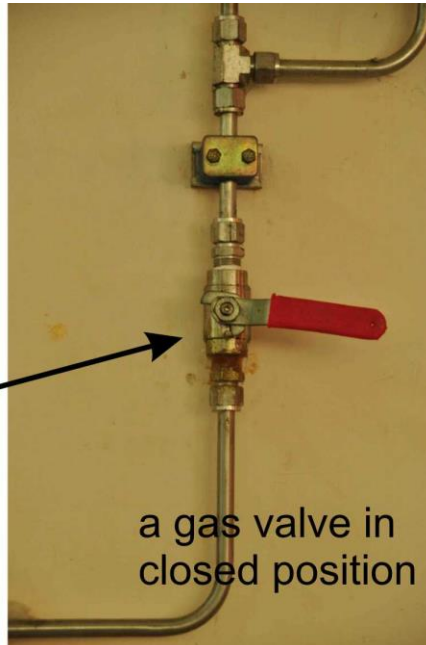
(see operation in later slide)

- **Close gas line/Turn off electricity supply**

gas line and valve



a gas valve in closed position



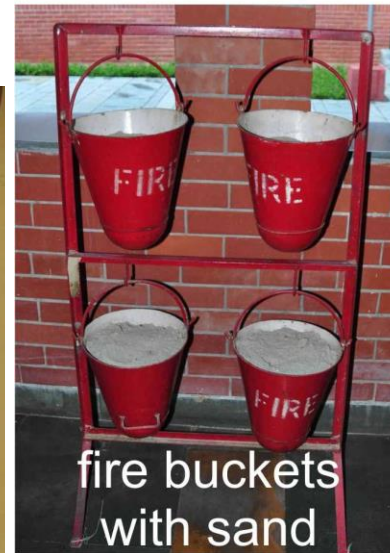
fire extinguishers



fire balnket



fire buckets with sand



# In case you spill solvents or break bottles

- Do **not go closer**
- Do **not try to touch** the broken glass
- Inform the instructors about the type of bottle
- Do **not bring any fire** close to the scene
- Make sure **the exhausts** are running
- **Move away** from the scene

# In case of a cut on body

- Do **not rub with hands**
- Do **not cover** it with any clothes
- Inform the instructors
- Move to the **emergency shower** and **clean with lots of water**
- Use **first aid Box**

# Do not do....

- Do **not eat or drink** in the lab
- Do **not smell or eat any chemicals**
- Do **not use ice produced by ice machine for beverages, food or food storage**
- Do **not pipette out anything using mouth**
- **Wash hands thoroughly** with soap before eating after lab session
- Do **not lean on work bench**
- Do **not wear expensive clothes** in lab, acid/base may spoil it
- Do **not do anything unknown**



**No food  
or drink**



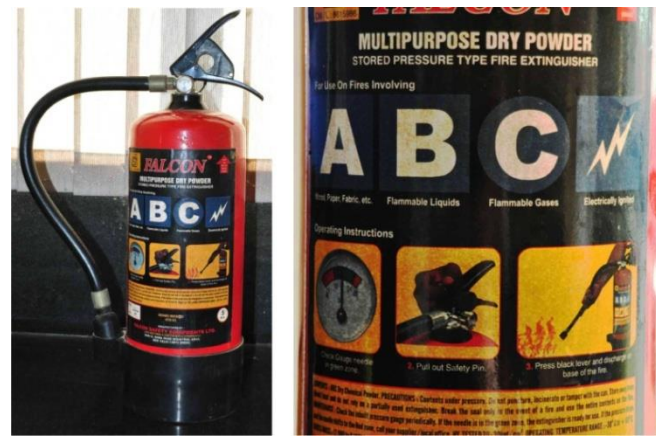
# Do not do....

- When **heating solutions: do not face it towards you or anyone**
- Use **exhaust fans** when using **ammonia or noxious fumes** formed during reactions
- Inform personals in case of **accidents or sudden uneasiness**
- If accidentally taken **any solution in mouth: wash immediately with lots of water**
- If accidentally spilled **any solution on body: wash immediately with lots of water**

# Follow the rules

- Keep safety instruction always with you
- Follow the rules
- Do not hesitate to explain what happened: this will help resolving the problems
- Do not make noise in the lab

# Fire extinguishers



## Dry powder fire extinguisher

- Multipurpose
- Especially useful for fire by organic solvent or materials that may spread

## How to use (always displayed on the bottle)

- Check gauge needle whether it is in green zone
- Pull out safety pin
- Press black lever and discharge at base of fire



## CO<sub>2</sub> fire extinguisher

- Useful for fire by electrical spark, short contact
- Do not use in case burning materials will fly (eg. paper)

## How to use (always displayed on the bottle)

- Remove safety clip and open red valve fully
- Direct discharge at base of fire

# Fire extinguishers



## Fire bucket with sand

- Useful for extinguishing small fire
- Especially useful when fire caused by Na, Li etc.

## How to use ([easiest](#))

- Dump the sand over the fire
- Make sure that sand is not contaminated with organic solvents



## Fire blanket

- Useful for extinguishing small fire to wrap around a person whose clothes are on fire

## How to use

- Remove blanket from its bag
- Wrap the top edges of the blanket around your hands
- Carefully cover the flames with the fire blanket
- Only if required use a second person
- Do not touch blanket afterwards

You must wear to enter the lab



# Introduction to Glassware





# Common Glassware



Beaker



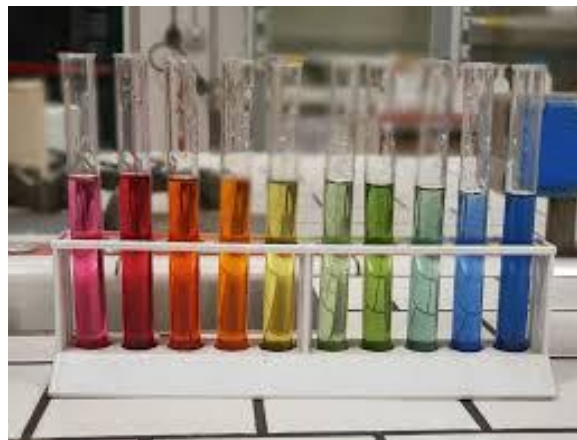
Conical Flask



Volumetric Flask



Measuring Cylinder



Test Tubes



Funnel

# Common Glassware



Burette



Pipette

