

# Welcome!

## CEEM

### Multidisciplinary Engineering and Sciences Hall



# Building Access

**Normal hours of operation are Monday-Friday, 8 a.m. - 4:30 p.m.**

IU students, faculty and staff must use their Crimson card to access the building. Door card access can only be established during normal working hours.

If a visitor is given a temporary door card and it becomes lost, they must wait until the next working day to receive a replacement (upon approval).

# General Safety Orientation

- This orientation provides essential safety-related information to new students, staff, and visitors to the MESH facility. Included in this section is the Emergency Action Procedures, potential hazards, and training opportunities.
- MESH has several areas under construction and supports the assembly of large devices. Care must be taken at all times and in all areas.

# Safety Overview

- **Hazard Categories**
  - Fire
  - Radiation
  - Industrial hazards
  - Chemical
- **General guidelines**
  - Forklifts - Crane
  - Machine shop
  - Obey signs
  - Injury on the job
    - Notify safety
    - Injury report
- **Safety manuals**
  - CEEM WEB page
- **Emergency response**
  - Fire
  - Power outage: Know your exits
  - Tornado: 1<sup>st</sup> floor conference room 141, Lower floor, inner hallways, no windows
- **Safety First**
  - Stop and report any activity that is unsafe.

# HAZARD CATEGORIES

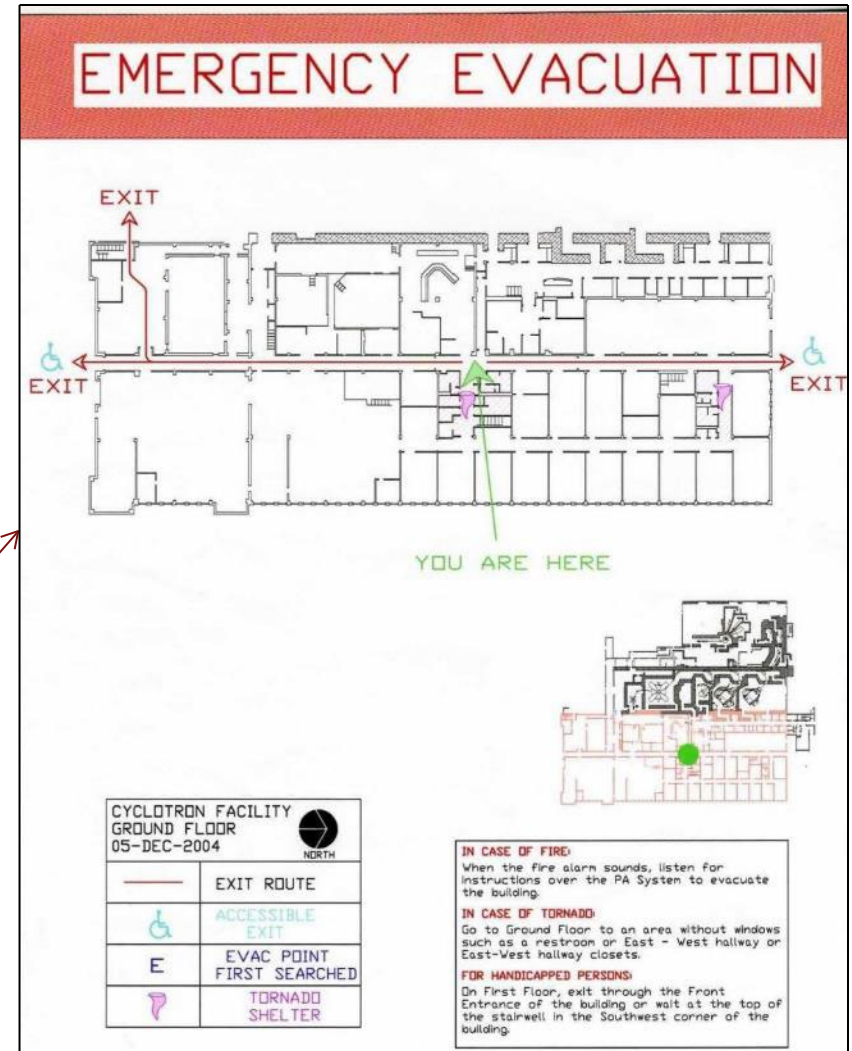
- **Fire** : throughout the building
- **Radiation** : restricted areas, accelerator vaults, radioactive materials rooms
- **Industrial** : experimental areas, vaults, lower-floor labs and technical shops, & machine shop
- **Chemical** : chemistry lab and technical shops

# HAZARD CATAGORIES

## Fire Emergencies

- Fire response  
Spot a fire, pull the fire alarm
- Fire Alarm response
  - Exit building immediately
  - Assemble away from the building on the far side of these three parking lots:
    - North
    - South
    - East

Example Map



*Fire extinguishers and evacuation maps are located throughout the building.*

# HAZARD CATEGORIES : Radiation

## Restricted Areas :

- Accelerator vaults and beam lines are interlocked when closed.
- Laser Labs are restricted when the warning light is illuminated on the outside of the area containing the laser.

Specific training and approval are required to enter these areas.





# HAZARD CATEGORIES: Industrial

- Hard hats must be worn at all times in areas that are posted “Hard Hat Area”



- Safety Glasses and shoes are required where posted and/or needed



***Don't just take one, wear it!***



# HAZARD CATEGORIES: Chemical

## Risks

- Skin exposure
- Spray into the eyes
- Inhalation
- Large Area Spills
- Unexpected reaction

## Protection:

- Gloves, goggles, apron
- Spill containment supplies
- Vented Hoods
- Showers
- Eye wash stations
- Respirator (fitting and testing req'd)



# **GENERAL GUIDELINES**

## **Controlled Areas:**

- Some areas of the lower-level have controlled access (a Crimson card or specific key is needed to enter these areas).
- Area-specific training is required to access controlled areas.

# GENERAL GUIDELINES

## Areas with additional controls:

### Chemistry Labs

*Laboratory safety training through Environmental Health and Safety*

### CEEM Machine Shop

*Training course required with Machinist.*

### LENS

*Limited access to this area requires radiation safety training.*

### Laser areas

*Principal Investigator approval is required. Plus, training on the use of the laser and of personnel protective equipment associated*



# GENERAL GUIDELINES

## Obey all safety signs

- “CAUTION” = Safety hazard roped off
- “**Locked OUT**” = Do not turn ON



- High Voltage



# OBEY ALL SAFETY SIGNS

- “Caution: Radiation Area”  
OR
- “Caution: Radioactive Materials Area”



- “Area Cleared: Do not Enter”



- “Roof beams being pulled”



# IN RESPONSE TO AN EMERGENCY (Personal Injury, Fire, or Explosion)

- Call 911

From an IU phone, this number will connect to IU dispatch.

- Assist people

If you are trained, administer first aid, stop bleeding, and stabilize the situation. If not, call 911 first and then stay with the injured person and monitor them until help arrives.





# Tornado Warning

- Announcement will be made over the intercom to go to a designated tornado shelter.

## **Take shelter:**

- Upstairs
  - Conference Room 141 across from the elevator
- Downstairs
  - Inner hallway next to elevator
  - LENS control area





# First Aid Kits and Defibrillators

*There are first aid kits located in each restroom and every lab. Please contact the Building Manager if you notice they are low.*

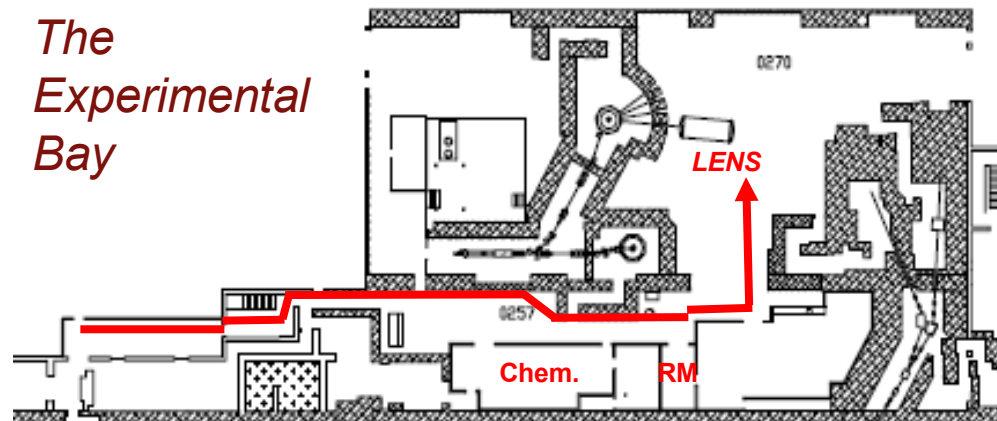
*LENS Control Area*



# OBEY ALL CAUTION SIGNS



# THE RESEARCH AREAS



# Radioactive Materials Storage

*Can be accessed from the Experimental Bay*

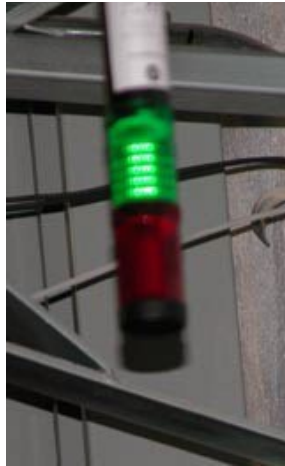


# EMERGENCY STOP BUTTONS

- Emergency Stop Buttons are located in Restricted Areas of vaults and near beam lines of LENS.
- Pressing this button will stop radiation delivery.



# LENS Beam Line Security Procedures

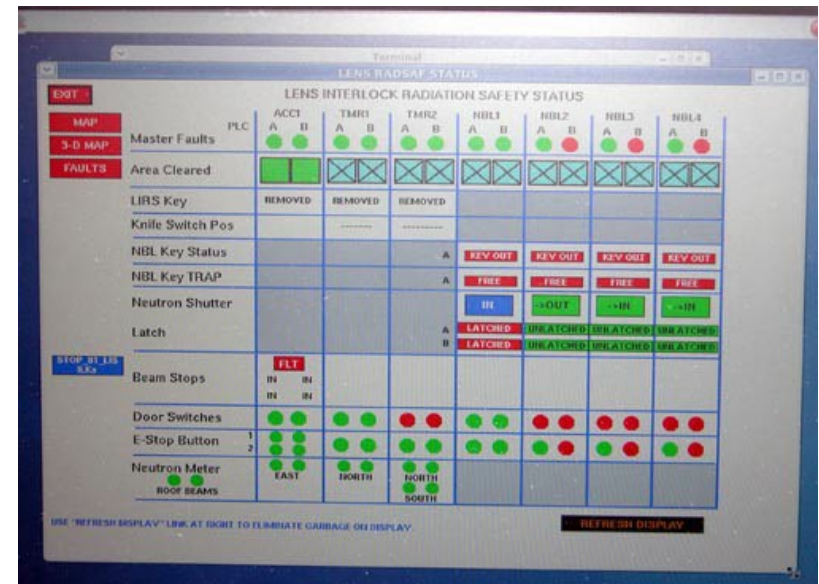


*The sample areas are accessed through interlocked doors. The key to the locks must be inserted and turned in the trap box before the shutter can open. When the key is in and turned and the shutter requested out of the beam line, the green light above the beam line will turn red indicating that the shutter is out and beam on. The key at this time is trapped and cannot be removed.*





# BEAM LINE CONTROL STATION



*Access to the LENS instruments requires on-site instrument specific and LENS radiation safety training*



# IU SAFETY CONTACTS: for MESH

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