

DEPARTMENT OF ZOOLOGY
LAB POLICY AND PROCEDURES

THE FOLLOWING IS FRAMED TO KEEP LABORATORY WORK EFFICIENT,
AND TO ENSURE A SAFE LEARNING ENVIRONMENT.

LAB USAGE

- Students are oriented and re-oriented about lab rules and safety precautions during the start of each semester and in their first lab classes.
- Instructions regarding handling hazardous chemicals, disposal of wastes, cleaning up of spills and operation of instruments are given.
- The instructions are reiterated through printed information in lab manuals.

EQUIPMENT PURCHASE AND INSTALLATION

- Selection of equipment/ instrument is done based on the lab need and annual budget allotment.
- Purchase of instrument is done as per the college's instrument-purchase guidelines by calling for competitive quotations from vendors (College Purchase Committee decides for equipment rated above Rs.50,000/-).
- Installation of equipment is done by the vendor in the presence of lab assistant in-charge of the instrument and testing its functionality and hands over the documents such as User Manual, warranty card, manufacturer and vendor invoice, contact information etc. for filing.
- Numbering and labelling of the instruments is done and training is provided for operators of the instrument.
- Equipment logbook is kept next to the instrument, in compliance with safety regulations, to ensure entry of usage.
- Maintenance of equipment, like cleaning, adjustment and calibration is done at periodic intervals to keep it working and extending the life of the equipment.
- Repairs are arranged for, to get the equipment working again.
- Records of issues related to the instrument, if any, are maintained such as the date when a problem occurred, it being removed for service, reason for breakdown or failure, corrective actions taken, and date in which it is returned for use.

CHEMICALS

- Are arranged in alphabetical order, enabling easy retrieval and replacement. Chemicals are stored appropriately at proper temperature and storage conditions, classified as solvents, acids, hazardous, volatile, etc.,
- All teachers give lab requirements every semester. The lab assistant and the faculty in-charge check availability and purchase of chemicals is

done as per the college's purchase guidelines, by calling for competitive quotations from vendors.

- Lab assistant in-charge of chemicals prepares lab solutions in advance (at least a day or two before the lab day).
- Students can get chemicals for their project work from the lab assistant in-charge (can be obtained a day before project hours).
- In case students have to prepare the chemicals themselves for lab or project work, they are required to submit the chemical requirement form approved by the Head of the Department, Course teacher(s)/ project guide and lab assistant in-charge of chemicals at least two days prior to their day of work.

GLASSWARES

- Glassware needed for each class's labs is issued to students, who use them when needed, until end of semester, by keeping them in lockers. Breakage has to be replaced by either a student or the entire class as decided by the faculty in-charge of glassware.
- Based on the availability of the glassware requested for, purchase of glassware is done as per the college's purchase guidelines by calling for competitive quotations from vendors.
- Breakage amount collected is utilized for replacement of the broken glassware.
- Stock checking of equipment, chemicals and glassware is done at the end of every academic year which is duly acknowledged by the faculty-in-charge, faculty from an allied department (who audits the stock account), Head of the Department and Head of the Institution.

GENERAL SAFETY PRINCIPLES FOR STUDENTS

Students are to

- wear a lab coat and put their hair up before entering a laboratory.
- conduct themselves in a responsible manner at all times in the laboratory.
- avoid leaving their lab activity unattended.
- read ALL directions for a lab procedure several times and follow directions EXACTLY as they are written. Ask questions, if not sure of how to proceed.
- always be alert to unsafe conditions and actions and call attention to them so that corrective action can be taken as quickly as possible.
- Avoid performing unauthorized experiments or handling equipment unless they have specific permission.
- be sure of all procedures in any lab investigation and understand possible hazards associated with the materials being used.

- carefully read labels before using an unfamiliar chemical.
- avoid entering the chemical stockroom unless accompanied by an instructor or lab staff.
- use equipment and hazardous materials only for their intended purposes and always inspect equipment for leaks, tears or other damage before handling a hazardous material.
- be familiar with the location of emergency equipment such as fire extinguishers, wash areas, emergency phone number and know the appropriate emergency response and first aid procedures, before beginning the work.
- ensure proper labeling of glassware, chemicals and experimental information.
- wear appropriate skin, eye and face protection.
- use fume hoods, wear gloves, goggles, etc.
- avoid touching, tasting, or smelling a chemical unless instructed to do so by the instructor, keep their hands away from the face when working with chemicals.
- avoid tasting or smelling chemicals.
- report all accidents, spills or broken glassware and equipment.
- keep their laboratory area clean.
- store their bags, packs and purses in appropriate places and off the lab tables.
- avoid handling electronic devices or phones while working in the lab without the permission of their faculty.
- avoid eating, drinking or mouth pipetting.
- notify their instructor of any medical conditions they may have, such as pregnancy, allergies, asthma, or epilepsy.

The Standard Operating Procedures insisted in the labs are:

- Never work alone in a laboratory.
- Be sure to clean your area thoroughly 5-10 minutes before the end of the class and keep the lab space clean for the next class period. Wipe down the counters, put away all equipment in clean, cool and dry condition. Wash your hands before leaving the lab area.
- Do not expose yourself to UV rays. Always wear UV-filtering safety glasses when looking at DNA gels in the UV light.
- Chemicals must be mixed only following the experimental procedure and only when the instructor is present.

- Never touch, taste, or smell a chemical unless instructed to do so by your instructor. Keep your hands away from your face when working with chemicals.
- Chemicals, stains, reagent bottles, unused glass-wares, etc. must be replaced in their original place.
- Do not inhale fumes directly from the container.
- Toxic chemicals should be handled with precaution and while discarding used ones, they should be discarded in labelled containers. Toxic chemicals, besides organic solvents, include mercury compounds, some halogens, mutagenic chemicals, etc.
- Use specific toxic and mutagenic chemicals under a fume hood.
- Gloves are required whenever there is potential for contact with bio-hazardous materials and should never be reused.
- Students may not enter the chemical stockroom unless accompanied by an instructor or lab staff.
- Report all accidents, spills or broken glassware and equipment. Know about simple first aid procedures to be followed in the lab.
- Clean microscope lens before and after use.
- Broken blades, sharp instruments and broken glass pieces should be disposed in separate containers.
- All microbial cultures should be handled with care. When culture of an organism is spilt, after putting off the Bunsen flame, cover the area, treat it with ethyl alcohol or any other disinfectant for some time and then only clean the area.
- Tools like scalpel, forceps, inoculation needles, etc. that come in contact with cultures or agar medium (sterile) should be sterilized by making the portion that goes into tube or Petri plate red hot on a Bunsen flame, cool in 95% alcohol and flame heat it, by passing over the flame, to burn off alcohol.
- During emergency power shut down, the power sources to instruments should be shut off.
- Turn off all burners before leaving the laboratory. Check that the gas line leading to the burner is off as well.
- Be familiar with the location of fire extinguishers and emergency phone numbers. **Action to be taken in case of fire** – Switch off the power supply, inform lab assistants and adjoining labs. Cover face with a wet cloth and evacuate the premises briskly leaving way for fire-fighting personnel with fire extinguishers.
- The location of exits, fire extinguishers and the emergency phone number should be ascertained **before** beginning work.

GUIDELINES FOR BIOSAFETY AND ETHICAL TREATMENT OF ANIMALS:

Institutional Animal Ethics Committee has been constituted as per Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA) Ministry of Environment, Forest and Climate Change, Govt. of India, New Delhi. The IAEC provides assurance for humane procedures and care of live vertebrate animals in teaching and research as detailed in the Rule 13 of the Breeding of and Experiments on Animals (Control and Supervision). Before teaching and research involving animal usage can be undertaken, the project will have to be reviewed and approved by the IAEC which specifies, the 4Rs (Reduce, Reuse, Replace and Rehabilitate).

Dissection Monitoring Committee has been constituted as specified by the UGC to ensure strict compliance of instructions relating to use of animals and is functional.

Institutional Biosafety Committee instituted as per Department of Biotechnology guidelines with emphasis given to facilitate the implementation of biosafety procedures, rules and guidelines under Environment (Protection) Act 1986 and Rules 1989 to ensure safety from the use of Genetically Modified Organisms (GMOs) and products thereof in research and application to the users as well as to the environment.

Dr. Sarah Sathyavathi

HEAD OF THE DEPARTMENT