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SCHOOL OF SCIENCES
Department of Geography

Manual for Geography Laboratory

Geography is not an armchair subject. It was through practical work – exploration, field observation, plotting maps of new lands discovered, etc. - that the subject came into being. Consequently, geography needs more of practical approach in the teaching and learning process. A well-equipped geography laboratory would provide the arena for geography practical work. This would ensure real and active students' involvement in the teaching and learning process. Basic skills and concepts in geography such as drawing of sketches, and diagrams, map making, map reading and analysis, modelling of geographic features; the concept of distance and scales, measuring heights, land survey, remote sensing techniques for example, can be effectively acquired through students' active participation in such activities in the right environment that geography laboratory would provide.

Thus, Geography laboratory plays a pivotal role in enriching geographical base of a student- a necessary part of learning that exposes students to full spectrum of disciplinary subfields- physical, human and nature-society geography as well as geographical techniques.

A laboratory of geography creates a congenial atmosphere and stimulates the imagination of the students and gives them the inspiration. It is not possible to make geography teaching effective without making use of maps, charts, globe etc. In the absence of a separate geography room it will be difficult to collect all these things at a place and it is practically impossible to take all these things from one place to another. Moreover, in the absence of a separate geography laboratory teacher will not get a congenial atmosphere which is quite essential for effective teaching of geography.

Establishment of New laboratory of School of Sciences, NSOU:

The First Geography Laboratory was set up at School of Sciences, Salt Lake, Sector V Campus of the University with 10 Computers with Geomatica Software (V 10.2) to cater to the needs of

the Post Graduate students in the 2007. Then a student friendly state of the art laboratory for Geography has been developed at Kalyani Campus of this University in 2015 to facilitate Post Graduate as well as Under Graduate students of the course in their practical classes in a centralized manner.

The Post Graduate **Geography Laboratory** at Kalyani is developed with modern laboratory instruments and equipments and software like MapInfo (version 12.5), Geomatica (10.2) installed in 15 computers in the Geography Laboratory. Satellite Imageries, Aerial Photographs, Mirror Stereoscope, Topographical sheets and Global Positioning System instruments. The laboratory has a Green Board and a White board too with an Overhead Projector for the students. The important list of Instruments that are available for students is tabulated below:

Purpose	Instruments
<i>Surveying</i>	Dumpy Level, Prismatic Compass, Theodolite, Measuring Tape, Ground Pin,
<i>Identification</i>	Rocks, Minerals, Maps, Globe, Three Dimensional Models
<i>Measurements</i>	Abney level, Clinometer, Rotometer,
<i>GIS</i>	GPS, Stereoscope (Mirror and Pocket), Computer (with RS & GIS Software)
<i>Others</i>	Aerial photos, Computer, Printers, Overhead Projector, Geographical Instrument Set Box

It is of strong opinion that establishment and maintenance of well-equipped laboratory for Post Graduate and Under Graduate Programme of Geography in University would enhance effective teaching and better performance. Standardized practical work done by students in the geography garden and laboratory should be assessed and made a significant part of the continuous assessment. This would make way for easy vetting of such continuous assessment exercises by the examination bodies.

The much desired high educational standard in the country could be achieved if such continuous class assessments are based largely on practical work done by students in well-equipped geography laboratories and weather observatories. The existence of such well-equipped infrastructural facilities is vital to successful and effective introduction of local geography. Though the Geography laboratory is small, but with the existence of such infrastructure and equipment, students can easily translate their theoretical knowledge into concrete and practical experience.

The School of Sciences is always trying to develop the Laboratory with more scientific instruments according to the syllabi. Through such practical approach geographical information becomes more meaningful and relevant to the students' day-to-day experiences and the total effect upon learning could be everlasting.

Rules to be maintained in the Laboratory

The need for the provision of well -equipped geography laboratory is precipitated on the following grounds. Geography, like any other scientific discipline, has certain basic tools and infrastructures which enable it further its objectives and achieve its aims. These tools include maps of all types, pictures, films and photographs, globes, charts, models of various geographic features and processes. Like the other sciences, geography teaching needs an ideal environment, a geography room or laboratory, where the tools and equipment that are crucial to effective teaching are safely kept. Such equipment – some very fragile or delicate - are safer, easy to reach and much more convenient to handle when they are kept in geography laboratory. Geography Laboratories would minimize, if not totally remove possible damages that may occur when such equipment's are moved from one place to another and are handled by students.

Do's

1. Students should conduct themselves in a responsible manner at all times in the laboratory
2. They should observe good housekeeping practices.
3. Before starting laboratory work the students must follow all written and verbal instructions carefully. If they do not understand a direction or part of a procedure, they must ask the concerned teacher before proceeding with the activity.
4. The instrument is set up and they should use the equipment as directed by the teacher.
5. They perform only those experiments authorized by the teacher. Then they carefully follow all instructions, both written and oral.
6. Students are not allowed to work in Laboratory alone or without presence of the teacher.
7. Any failure / break-down of equipment must be reported to the teacher.
8. They should protect themselves from getting hurt while conducting any survey or working with instruments or at the computer.

Don'ts

1. Students are not allowed to touch any equipment or other materials in the laboratory area until they are instructed by Teacher or Technician.
2. They should not talk aloud in laboratory.
3. They should replace the materials in proper place after work to keep the laboratory area tidy.
4. They should not wander around the room, distract other students, startle other students or interfere with the laboratory experiments of others.
5. Do not eat food, drink beverages or chew gum in the laboratory and do not use laboratory glassware as containers for food or beverages.
6. Smoking is strictly prohibited in laboratory area.
7. Do not open any irrelevant internet sites on laboratory computer.
8. Do not use a flash drive on laboratory computers.
9. Do not upload, delete or alter any software on the laboratory computer.

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