
Title : Establishing an Ergonomics Research Facility: Indian Context**Author(s) :** Sougata Karmakar**Institution :** Department of Design, Indian Institute of Technology (IIT) Guwahati,
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Laboratories are the heart of research activities in any academic, research and industrial organization. All the laboratories should be ergonomically designed to have optimal productivity from the system (comprising of researchers, laboratory equipment and environment) in terms of research findings, publications and occupational well-being of the researchers. It is well known that most of the laboratories in academic and research institutions (except some advanced and sophisticated industrial laboratories) in India are not ergonomically designed due to lack of several resources such as funding, contextual knowledge and expertise, skilled human-resources etc. to mention few. It is obvious that people must have the expectation that at least 'laboratory for Ergonomics research and training' should be ergonomically designed. Here is the biggest challenge for ergonomists to develop their laboratory in user-friendly manner with proper planning and execution. In recent years with the advent of thrust in innovative product design in India (Make in India), importance of 'Ergonomics laboratory' have been increased by many folds. Most of the IITs, NITs and NIDs are planning to setup their ergonomics evaluation facilities.

In Indian scenario, while a budding researcher in the field of ergonomics is planning to set up a new laboratory, is facing difficulty to find out some ready references regarding exemplary/ model ergonomics laboratory in India, requirement of laboratory space lay-out, list of essential instruments/equipment/ devices, list of vendors who are able to deliver the required instruments, and so on. Hence the present paper is intended to address these issues towards setting up an Ergonomics laboratory to be used for common ergonomics evaluation purposes in educational and research institutes. This could be further extended based on specific requirement of research.

The whole paper has been structured with different headings as mentioned below to provide a fair idea about history and development of ergonomics research in India and road map in setting up new ergonomics laboratory.

- a. History and development of Ergonomics in India
- b. Indian educational institutions which are dealing with ergonomics as core or elective subject
- c. Ergonomics laboratories in India
- d. Purpose based plan for ergonomics laboratory set up
- e. Commonly used equipment/ instruments for ergonomics studies
- f. Basic safety and environmental parameters in laboratory set up
- g. Virtual representation of space layout and equipment arrangements for different types of ergonomics evaluation facilities (anthropometry, biomechanics, CAD/DHM, Gait and motion analysis etc.)
- h. List of vendors/ suppliers (in India) who supply instruments/ devices required for ergonomics research
- i. Consideration for specific research requirement (automotive DVI research, automotive crash testing, virtual reality application, product development laboratory, Sports-exercise physiology, environmental physiology, etc.)