**EHS 3209 BUILDING TECHNOLOGY III (3 CU)**

**Course description:** A description of building techniques, technology and materials and methods of inspecting, supervising and provision of appropriate advice on parameters that influence comfort in buildings, and the construction processes is given.

**Course Objectives**

By the end of this course the student should be able to:

1. Describe factors that affect comfort in building construction.
2. Explain the need for positioning of buildings.
3. Recommend the acoustic and illumination requirements of buildings.
4. Explain the need for safety in building construction.

**Detailed Course Outline**

* Acoustics and illumination and how they affect audio, thermal and visual comfort in designed spaces
* **Audio Comfort:** Source of sound and noise. Properties and behaviour of sound, Sound and noise and how they relate to the ear, Sound reduction and insulation
* **Thermal comfort.** Objective factors: humidity, temperature, air movement, solar radiation. Subjective factors: skin or body temperature, means of control, building design, macro- and micro-climate means. Heating and ventilation systems.
* **Visual comfort:** Properties and behaviour of light, light anulation, glare. Visual performance and illumination. Duration of visual task, day lighting, control through positioning of buildings, opening in relation to room sizes etc. Artificial general lighting. Principles of natural and artificial lighting. Common problem with lighting, e.g. glare, eye-strain
* Safety in building construction (e.g. universal access, stairs, ramps, windows, building surroundings)
* Practical/ site visits

**Mode of delivery:**

* Lectures, tutorials, practical/field work.

**Mode of Assessment**

- Continuous assessment **(40%)**.

- End of semester exam: MCQ’s, short answer and long assay questions **(60%)**.

**Suggested Reading List**

1. Lecture handouts and additional materials on reserve at the MUSPH Resource Centre.

# 2. McMullan, R., (2002). *Environmental Science in Building*. 5th Ed. Macmillan.

3. Riley, M and Cotgrave, A. (2005). *The Technology of Refurbishment and Maintenance*

4. Low Cost Housing in Developing Countries; by Mathur