

EAR743	Elective -I (i) Ergonomics and Product Design	HRS 3-0-0	CR-3
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Objective

To expose the students to the requirements of designing for the human comfort in accordance with anthropometry. The students will have knowledge of ergonomics and its applications in Product design including designing for the physically challenged and the elderly.

Module 1

INTRODUCTION

Human being in the manmade world and importance of ergonomics, Gross human anatomy, Ergonomics for children and old people, Definitions related to Ergonomics and Product design, Historical development in the concept of ergonomics and product design, Role of Product designer.

Module 2

ERGONOMICS AND DESIGN

Application of human factors data. Human activities, their nature and effects, Man-machine interaction and physical environment - Environmental Condition including, thermal, illumination and noise.

Applied anthropometry – Human response to climate, Human performance and system reliability, designer's priorities.

Module 3

ASPECTS OF PRODUCT DESIGN

Visual, Auditory, Tactual, Olfactory human mechanisms, Physical space and arrangement. product display, process of seeing, visual discrimination, quantitative and qualitative visual display, Alphanumeric and related displays, Visual codes and symbols.

Processes of product designing, manufacturing and testing

Form, Colour, Symbols, User specific criteria, Material selections, Technology and recyclability, Packaging. Multiple Utility oriented approach to Product Design.

Module 4

UNIVERSAL DESIGN

Design of special elements in buildings for physically challenged and old aged

Module 5

DESIGN EXERCISES

- Design of Household elements, tools and devices.
- Design of furniture.
- Design of Industrial Product – Automobiles and Electrical
- Element design for differently able, old and children.

Reference

1. Time Saver Standards for Interior Design
2. Andrew Alpern, Handbook of Speciality Elements in Architecture, McGrawhill Co., USA, 1982.
3. Francis D.K.Ching, Interior Design Illustrated, VNR Publications, New York, 1987.
4. Helen Marie Evans, An invitation to Design.
5. Crosbie, M. J. and Watson, D. (2005). Time Savers Standards for Architectural Design: Technical data for Professional Practice. 8th Ed. The McGraw-Hill Company.