

RO8091 INDUSTRIAL DESIGN AND APPLIED ERGONOMICS

DETAILED SYLLABUS

OBJECTIVES:

- To explain the general principles that governs the interaction of humans in their working environment
- To improve improving worker performance and safety.
- To know about the environmental conditions in the industry.
- To know about bio thermodynamics and bioenergetics
- To know about the human factors in industrial aspects

UNIT I INTRODUCTION

Definition, human technological system, multidisciplinary engineering approach, human-machine system, manual, mechanical, automated system, human system reliability, conceptual design, advanced development, detailed design and development. INFORMATION INPUT: Input and processing, text, graphics, symbols, codes, visual display of dynamic information, auditory, tactual, olfactory displays, speech communications.

UNIT II HUMAN OUTPUT AND CONTROL

Physical work, manual material handling, motor skill, human control of systems, controls and data entry devices, hand tools and devices.

WORKPLACE DESIGN:

Applied anthropometry, workspace design and seating, arrangement of components within a physical space, interpersonal aspects of work place design, design of repetitive task, design of manual handling task, work capacity, stress, and fatigue.

UNIT III ENVIRONMENTAL CONDITIONS

Illumination, climate, noise, motion, sound, vibration, colour and aesthetic concepts. BIOMECHANICS: Biostatic mechanics, statics of rigid bodies, biodynamic mechanics, human body kinematics, kinetics, impact and collision.

UNIT IV BIOTHERMODYNAMICS AND BIOENERGETICS

Biothermal fundamentals, human operator heat transfer, human system bioenergetics, thermoregulatory physiology, human operator thermo regularity, passive operator, active operator, heat stress.

UNIT V HUMAN FACTORS APPLICATIONS

Human error, accidents, human factors and the automobile, organizational and social aspects, steps according to ISO/DIS6385, OSHA"s approach, virtual environments.

TEXT BOOK:

1. Chandler Allen Phillips, "Human Factors Engineering", John Wiley and Sons, New York, 2000.

Diploma, Anna Univ UG & PG Courses

Notes
Syllabus
Question Papers
Results and Many more...

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www.AllAbtEngg.com

REFERENCES:

1. Bridger R S, "Introduction to Ergonomics", Taylor and Francis, London, 2003.
2. Mayall W H, "Industrial Design for Engineers", London ILIFFEE Books Ltd., UK, 1998.
3. Mark S Sanders, "Human Factors in Engineering and Design", McGraw Hill, New York, 1993.