

ERGONOMICS

Paper no. -HSRM - 104

ES – 1

Credits – 3 +1=4

Sem. – 1 (M.Sc. R. M.)

Marks- 100 +35 =135

OBJECTIVES :

- 1.** To provide a general introduction to ergonomics.
- 2.** To provide knowledge about ergonomics approach to design requirement at all levels.
- 3.** To provide knowledge about consideration to design work place and furniture.
- 4.** To understand the environmental factors contributing to productivity, safety, control and well-being of individual performing the work

UNIT – 1

- i.** Ergonomics definition, origin and historical perspective.
- ii.** Scope of ergonomics, Need and importance.
- iii.** Man-machine system - Element of ergonomics.

Ergonomics criteria for designing product.

UNIT – 2

- i.** Workers consideration in work space design – Anthropometric, Workhabit, work posture.
- ii.** Work surface design consideration.

- iii. Environmental factors – Temperature, Humidity, Light, Noise, Sound and Thermal Environment.
- iv. Atmospheric pollution.

UNIT – 3

- i. Factors responsible for exchange of heat between body and surrounding environment.

Industrial Ergonomics

- i. Ergonomics factors in occupational health.
- ii. Productivity and quality enhancement.
- iii. Designs that integrate human in to industrial design.

UNIT – 4

- i. Ergonomics furniture recommendations for applications.
- ii. Techniques of ergonomics research of furniture.
- iii. Organisation helping in undertaking research such as educational, public and private.

PRACTICAL :

1. Design evaluation of available equipments in laboratory.
2. Visit to N.I.D./N.I.O.H.
3. Preparing a scrap book for various designs tools and equipments.
4. Determination of workload using heartrate meter.

5. Comparing various brands of equipments available and studying energy cost of using equipments.
6. Assessments of heat stress and interpretation of results.
 - i. Out door
 - ii. Indoor/kitchen
7. Measurement of noise using noiselevel meter for various situation in home, office and traffic situation.
8. Determining the relationship of anthropometric dimensions of workers with space requirements for some selected activities – cooking, chopping and grating on platform.

REFERENCE :

1. Johson B.J. (1970). Equipment for modern lining. Mac millan co. New York.
2. Pect L.J., and picket , M.S. and Arnold M.G. (1962) : Household equipment , 7th Edition. John wiley and sons inc.
3. Wilson, P (1981) : Household Equipment selection and management , Houghton miflan Co; Boston.
4. Ergonomics – Surmya Joshi – Dept of home management-1998
5. Essentials of ergonomics by Prof. Veena Gandotra, Krishna oberoi and Promila Sharma.
6. Obone David (1980): Ergonomics and work; John wiley and Sons. New York, London.