

RGPV ME 7 SEM CBGS SYLLABUS
Elective –III ME- 7004 (3) Ergonomics

1. Productivity and work study, Techniques for productivity improvement, The influence of working conditions on work study.

2. Work measurement, Purpose and procedure, Work sampling study, sample size, Random observations, Errors, Standard data, Man power planning, Production planning based on work study, Design of individual work, design of group work, Design of product oriented organisation. Process charts of man and material, Multiple activity chart, String chart.

3. Human factors in engineering, Introduction: Definition, History of Development, Characteristics of Man Machine Systems, Relative capabilities of Human beings and Machines, Information Input and Processing :
Human Motor Activities :

a. Bio mechanisms of motion, Measurement of Physiological Functions, Energy Expenditure in Physical Activities.

b. Human Control of Systems: Human input and output channels. Compatibility, Tracking Operations, Design of Control.

c. Anthropometry: Anthropometrics Data and their uses, Work Space Dimensions. Design of seats and seating Arrangement, Location of components, Design of work place.

d. Introduction to information theory, Factors affecting information reception and processing. Coding and Selection of sensory inputs.

e. Human Sensory Process: Vision, Hearing, Cutaneous, Kinesthetics, and orientation senses.

4. Display:

a. Visual Display: Quantitative and qualitative types of visual display, Visual indicators and warning signals, pictorial and Graphic displays, Alphanumeric Characteristics, Symbolic Codes.

5. Auditory and Textual Display: General Principles, Characteristics and Selection of Auditory and Textual display. Environment and Safety: Introduction to Environmental stresses and their impacts on

human work. Industrial Safety: Analysis of cost of accidents, Hazards in various fields like Fire, Electrical shocks. Chemicals, Material Handling, Radiation Machine and Machine Tools and Methods of eliminating them, Personnel Protective equipments, Government legislation about occupational safety, organization for safety, plant safety.

Books Recommended :

1. McCormick, Human Factors in Engineering and design.
2. Singalton, Introduction to Ergonomics.
3. Grandjean, fitting task to the men, TMH
4. ILO, Work study
5. R.M. Currie, Work Study, BIM Publication