

NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Management - NOC:Human Factors Engineering

Subject Co-ordinator - Prof. Virendra Kumar Tewari, Prof. Pradip Kumar Ray

Co-ordinating Institute - IIT - Kharagpur

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

- Lecture 1 - Definition, purpose, and development of Human Factors and Ergonomics
- Lecture 2 - Types and components of worksystems, their interactions and evaluations
- Lecture 3 - Human components, machine components and environment components of worksystems
- Lecture 4 - Modern worksystems, FMJ vs FJM
- Lecture 5 - Contribution of human factors in systems design, engineering and management
- Lecture 6 - Anthropometry in product/process design, MHD, anthropometric design motto
- Lecture 7 - Types of anthropometric data, principles of applied anthropometry
- Lecture 8 - Examples of anthropometric design, numerical exercises
- Lecture 9 - Working Posture Analysis, Postural Triangle, Design for Seated and Standing Workers - Part 1
- Lecture 10 - Working Posture Analysis, Postural Triangle, Design for Seated and Standing Workers - Part 2
- Lecture 11 - Metabolism during work, Aerobic and anaerobic work, oxygen uptake
- Lecture 12 - Physical work capacity and energy expenditure, Individual differences, RWL, MOW
- Lecture 13 - MOE expenditure, Subjective measures of physical effort, Borg RPE scale, Factors
- Lecture 14 - EE of various operations in agriculture, construction and manufacturing industry - I
- Lecture 15 - EE of various operations in agriculture, construction and manufacturing industry - II
- Lecture 16 - Types of Injury Problems in Manual Handling Tasks, Types of Activities and Body Movements
- Lecture 17 - Biomechanical Modelling and Analysis of Manual Lifting
- Lecture 18 - Definitions and Standards of Lifting: NIOSH Lifting Equation
- Lecture 19 - EC Guidelines, UK Health and Safety Commission Guidelines
- Lecture 20 - Use of Material Handling Aids, Types of Material Handling Devices, Numerical Problems
- Lecture 21 - Ergonomic Problems in Computer Workstations, Design Elements of Computer Workstation
- Lecture 22 - Specifications of Computer Workstation Design Elements
- Lecture 23 - Methods to Reduce Glare/Reflection on Screen
- Lecture 24 - Design of Human-Computer Interaction
- Lecture 25 - Evolution of Technology in Computer Screen, Numerical Problems
- Lecture 26 - Work Postures and Related Complaints, Work Postures for Different Tasks, Task Analysis
- Lecture 27 - Power Law of Practice, Learning Curve, Numerical Pro
- Lecture 28 - Work Posture Assessment, Rapid Entire Body Assessment (REBA), MSDs/RMIs
- Lecture 29 - Hand tool design: Fitting the task, user and hand, Usage of hand tools and types of

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- Lecture 30 - Design guidelines for hand tools
- Lecture 31 - Environment Component in Worksystems, Ergonomic Design of Physical Environment
- Lecture 32 - Ergonomic Design Framework for Environment, Importance of Illumination
- Lecture 33 - Measurement of Illuminance, Luminance, and Contrast
- Lecture 34 - Measures of Contrast, Contrast Ratio under Different Work Situations
- Lecture 35 - Direct and Indirect Glare or Reflection, Illumination for Inspection and Quality
- Lecture 36 - Problem of Heat Stress at Workplaces, Thermoregulation Process, Acclimation and
- Lecture 37 - Thermal Balance Equation and Heat Stress
- Lecture 38 - Quality of Thermal Environment, Evaluation of Thermal Environment
- Lecture 39 - Whole Body Vibration and Sources of Vibration Discomfort
- Lecture 40 - Design guidelines for hand tools
- Lecture 41 - Auditory Environment and Human Performance, Measurement of Sound and Noise Exposure
- Lecture 42 - Noise Exposure and Hearing Loss, Noise Analysis and Noise Reduction using Engineering
- Lecture 43 - Effects of Noise on Performance, Broadbent and Poulton Theories, Interference of Noise
- Lecture 44 - Octave bands and examples
- Lecture 45 - Ergonomic design of auditory environment in different workplaces
- Lecture 46 - Concepts of Design for Manufacturing (DFM), Design for Assembly (DHA), and Design
- Lecture 47 - Product Design Assessment and Important Measures, Manual Assembly Design Efficiency
- Lecture 48 - Assembly Time Determination with PMTS Methods, Human Factors Principles in DHA
- Lecture 49 - Maintenance in Manufacturing/Production System - Important Ergonomic Design Issues - Part I
- Lecture 50 - Maintenance in Manufacturing/Production System - Important Ergonomic Design Issues - Part II
- Lecture 51 - Definition of Shift Work, Problems with Shift Work, Effect on Circadian Rhythms
- Lecture 52 - Problems of shift workers, Shift Work and Human Performance
- Lecture 53 - Recommended Shift Work Schedules
- Lecture 54 - Major Ergonomic Issues and Problems in Shift Work Design - Part 1
- Lecture 55 - Major Ergonomic Issues and Problems in Shift Work Design - Part 2
- Lecture 56 - Concepts of Ergonomic Performance and its Indicators
- Lecture 57 - EPI Assessment Tool Development
- Lecture 58 - Factors and their level of assessment
- Lecture 59 - Application of EPI Model in Different Worksystems
- Lecture 60 - Epilogue