Description:

**Introduction:** The evolution of Ergonomics, reasons to use ergonomics, micro- and macro-ergonomics, performing ergonomics, judging the effectiveness of ergonomics intervention.

**Human Body:** Anthropology and anthropometry, design procedure, (skeletal system, biomechanical description of the body, human strength),

**Office Workstation:** Theories of healthy standing and sitting, free posturing, ergonomics design of the office computer workstation.

**Human Senses:** Body sensors, vision sense, color theories, auditory sense, and smelling sense, tasting sense, touching sense, human body interaction with environment, thermoregulation of human body, working in polluted air, working at high altitude, effect of vibration on human body.

**Methods, Standards and Work Design:** Determination of work content, workstation, work methods, and times required for various occupational jobs/tasks. Design of tasks/jobs, workplace, and work environment to increase productivity, eliminate waste, and decrease occupational injury/illness.

Textbook:


Reference Book

Bridger, R. S. Introduction to Ergonomics, 3rd edition, CRC Press 2009
Objectives/Outcomes

Objectives
After completing this course, students should be able to:
1. identify the milestones in the evolution of industrial society,
2. Learn the anatomical and mechanical structure of the human body and anthropometry techniques available to engineers,
3. Discuss the concept of the office (computer) workstation. Ergonomic design of the office workstation principles is introduced,
4. Investigate human senses in general and special focus on the vision sense and the auditory sense,
5. Test and analyze lab experiment results to design, implement, and interpret sound and illumination level measurements,
6. Measure the work content in jobs, tasks, workstations, work environment, and work systems, and how to design,
7. Identify techniques used in the evaluation of work systems,
8. Introduce you to the various methods to obtain a time standard for a job and when each method is appropriate.

Course Outcomes
1. Be able to relate the evolution of the industrial engineering profession to the evolution of industrial society.
2. Understand the applications for predetermined time systems and standard data.
3. Be able to determine time standards with allowances for appropriate work tasks.
4. Be able to apply concepts of work science in the evaluation of a real-world work system.
5. Be able to design and/or Redesign of workstations using ergonomically knowledge.
6. Be able to make practical recommendations and justifications for project solutions.

Applying Ergonomics science on a project.

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<thead>
<tr>
<th>Grading:</th>
<th>5 %</th>
<th>Attendance and participation</th>
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<tr>
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<td>10 %</td>
<td>Quizzes</td>
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<td>Midterm</td>
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<td>Project</td>
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<td>50 %</td>
<td>Final Exam</td>
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Deadline for the project is 30/05/2014

Good Luck and all the best wishes Dr. Abed Schokry