

Revised by: C. Bertram
Reviewed by: R. Mallard
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Board approval: December 9, 2010

Industrial Education Safety (IES) 1053 Principles of Ergonomics (1Unit)
[formerly Industrial Education Safety 53]

Prerequisite: None

Total Hours: 18 hours lecture

Catalog Description: This course covers the use of ergonomic principles to prevent musculoskeletal disorders. Topics include work physiology, anthropometry, musculoskeletal disorders, video display terminals, and risk factors such as vibration, temperature, material handling, repetition, and lifting and transfers in health care. Course features industrial case studies covering analysis and design of work stations and equipment, laboratory sessions in manual lifting, and coverage of current Occupational Safety Health Administration (OSHA) compliance policies. This course is offered on a Pass/No Pass basis with the option to receive a letter grade.

Type of Class/Course: Degree Credit

Textbook: *Cal-OSHA General Industry Safety Orders*. Mangan Communications, Inc.: Davenport, Iowa, 2008. Print.

Additional Required Materials: None

Course Objectives: By the end of the course, a successful student will be able to

1. identify work-related musculoskeletal and nerve disorders,
2. describe risk factors associated with work-related musculoskeletal and nerve disorders,
3. discuss ergonomic control measures applied to work-related musculoskeletal and nerve disorders,
4. analyze manual lifting tasks and estimate reasonable limits,
5. describe components of a successful ergonomics program, and
6. discuss OSHA and California (Cal) OSHA current enforcement policies.

Course Scope and Content:

- Unit I Musculoskeletal Disorders Defined
 - A. Types
 - B. Causes
- Unit II Work-related Musculoskeletal Disorders Related to Section 5(a) (1) & §5110
 - A. General Duty Section Citation Criteria – OSHA
 - B. CCR Title 8, §5110 Citation Criteria – Cal-OSHA
- Unit III Job Evaluation Methods for Identification of Work-related Musculoskeletal Disorders
 - A. Repetitive Motions
 - B. Body Position
- Unit IV Office Ergonomics
 - A. Applications to Office Environments

Learning Activities Required Outside of Class: None



Methods of Instruction:

1. Lecture
2. Group exercises

Methods of Evaluation:

1. Written final exam
2. Performance observation