



**THE OHIO STATE UNIVERSITY**  
COLLEGE OF ENGINEERING

# Principles of Occupational Biomechanics and Ergonomics

## ISE 5600

**Credit Hours:**

3.00 - 3.00

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**Course Levels:**

Graduate

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**Course Components:**

Lecture

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**Course Description:**

Introduction to anatomical, physiological, and biomechanical bases of physical ergonomics; workplace assessment techniques; biomechanical modeling; bioinstrumentation; preparation for advanced topics and research.

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**Prerequisites and Co-requisites:**

Prereq: Grad standing.

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**Course Goals / Objectives:**

- An introduction to the field of occupational biomechanics. Provides a basic knowledge of human anatomy, physiology, properties of biological materials, human capacities and limitations, bioinstrumentation, and workplace evaluation methods
  - Explore design and modification of workplaces, tasks, and tools for promotion of worker health, while maintaining or improving performance outcomes
  - Think creatively regarding the many topics that can contribute to our understanding of factors that influence the well being, performance, and health of humans in occupational environment
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**Course Topics:**

- Ergonomics process
  - Anthropometry
  - Occupational biomechanics
  - Assessment and control of low back pain risk
  - Assessment and control of upper extremity musculoskeletal disorder risk
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**Designation:**

Elective