Course name: MCE 522
Man-Machine Systems and Ergonomics

Department: Mechanical Engineering

Semester: 1 or 2

Methods of Education

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Recitation</th>
<th>Lab</th>
<th>Project (F. Study)</th>
<th>HomeW</th>
<th>Others</th>
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ECTS: 8

Language: English
Compulsory/Elective: Elective
Prerequisites: None

Course Contents

This course covers the topics of the man-machine systems. The focus is on the tools of man-machine interaction and working environments in modern manufacturing systems, such as human body systems, physical and mental workloads, noise and effects, temperature, air flow, humidity, lightening, anthropometric dimensions, psychosocial approximations, and cognition. The goals of the course is to provide the principles of designing an ergonomic work station in existing technology of modern manufacturing systems.

Course Objectives

- To give some knowledge in investigation of man-machine systems
- To grasp the current directions of man-machine interactions
- To provide in-depth coverage of ergonomics research areas
- To prepare students to conduct research and presentations

Learning Outcomes and Competences

- To improve the tools of the principles of ergonomics and man-machine systems
- To define the human body and movement systems
- To explain the relationship of the human-machine-environment
- To understand and measure the effects of the environment on job shop
- To analyze the anthropometric data and anthropometric working volumes
- To design the appropriate job shop regarding work health and safety

Textbook and/or References


Assessment Criteria

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<tr>
<th>Assessment Items</th>
<th>If any, mark as (X)</th>
<th>Percentage (%)</th>
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<tbody>
<tr>
<td>Midterm Exams</td>
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<td>Quizzes</td>
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<td>Homeworks</td>
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<tr>
<td>Projects</td>
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<td>Term Paper</td>
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<td>Laboratory work</td>
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<td>Final Exam</td>
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Instructors

Assoc Prof Dr Ergün Eraslan

Week  Subject
1   Introduction to ergonomics and basic concepts
2   Body and movement systems, muscles, bones and articulates
3   Man-machine systems in technology
4   Man-machine interaction, individual and machine preventors
5   Human and working environment
6   Voice, noise and effects, temperature, climate, air flow, humidity, lightening
7   Physical and mental workloads, cognitive ergonomics
8   Mid-Term
9   Anthropometric dimension and working volumes
10  Psychosocial approximations
11  Design of ergonomic work station
12  Project Presentations
13  Project Presentations
14  Project Presentations