Course number and name	END232 / Ergonomics
Credits, contact hours, categorization of credits	3 credits / 42 hours / Engineering topic
Instructor or course coordinator	Fethi CALISIR, Cigdem ALTIN GUMUSSOY
Text book and other supplemental materials	• Lecture Notes • Oborne, D.J. (1995), *Ergonomics at Work*, Wiley • Helander, M. (1995), *A Guide to the Ergonomics of Manufacturing*, Taylor & Francis • Carlett, E.N. (1995), *The Ergonomics of Workspace and Machines*, Taylor & Francis • Pulat, B.M., (1992), Fundamentals of Industrial Ergonomics, Waveland Press • Kroemer, K.H.E., Kroemer, H.B., Kroemer-Elbert, K.E., Ergonomics How to Design for Ease and Efficiency, Prentice Hall International • Shneiderman, B., Plaisant, C. Designing the User Interface Strategies for Effective Human-Computer Interaction, Addison-Wesley.

Course information	
Content	This course is intended to provide an overview of the interdisciplinary field of ergonomics. Attention is devoted to provide the students with an in-depth understanding of the underlying principles of this discipline, ergonomics considerations in design/redesign, and research basis of ergonomics.
Prerequisites	None
Type	Required

Course learning outcomes

Students who pass the course will:

I. Recognize the various dimensions of Ergonomics, appreciate the importance and integration of each independent factor to the overall safety and effectiveness of an individual.
II. Describe in writing and/or by illustrations physical capabilities and limitations, human sensory, cognitive other factors relevant to the design of human-machine systems, with reference materials
III. Gain knowledge and skills which are necessary to become scientist-practitioners of ergonomics and human-computer interaction
IV. Select and correctly use appropriate human-machine system analysis and design tools, with reference materials
V. Apply knowledge of anthropometric variation of the human body in relation to work station design
VI. Understand the factors associated with Occupational Biomechanics

Student outcomes	Level of contribution
SO1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.	Not applicable
SO2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.	Partial
SO3. An ability to communicate effectively with a range of audiences.	Little
SO4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.	Partial
SO5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.	Little
SO6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.	Not applicable
SO7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.	Little

Week	Topics	Learning outcome(s)
1	Introduction to Ergonomics	II, IV
2	Information Ergonomics	II,IV
3	Information Ergonomics	II, IV
4	Human Computer Interaction	II, IV, VII
5	Human Computer Interaction	II, IV, VII
6	Physical Ergonomics	II, IV
7	Physical Ergonomics	II, IV
8	Engineering Anthropometry	II, IV
9	Engineering Anthropometry	II, IV
10	Cumulative Trauma Disorders	II
11	Hand Tool Design	II , IV
12	Manual Material Handling	II, IV
13	Occupational Biomechanics	II, IV
14	Project Presentations	III, V, VII