

Course Code	Course Name	Year/Semester	Theory	Practice	Credits
ARC 2053	ERGONOMY IN ARCHITECTURAL DESIGN	2019-2020/FALL	3	0	3

Level of Course: Undergraduate

Course Type: Elective Course

Language of the Course: English

Course time: Monday 09.00-12.00

Course

Classroom: B1-06

Office Hours: Tuesday 09.00-17.00

Mode of Delivery: One drive loads, presentations, final submission, attendance

Prerequisites and

Co-requisites: None

Course Lect.: Nil Kokulu

Coordinator:

Name of Lecturer(s): Lect. Nil Kokulu

Course Teaching Assistant:

Course Objectives: To understand the principles of human factors and the relationship to environmental design. To understand issues of ergonomic design in the built environment. To learn metrological analysis of the anthropometrics relationship to ergonomic environmental design..

Course Description: This course introduces students to concepts of human factors, the anthropometric aspects of ergonomics that applies the related information to the design of interior spaces. Course materials relate to applications that follow the principles of human factors and ergonomic method. The purpose of the course is to help students to learn to apply the principles of human factors/ergonomics to designing interior spaces. Students will learn about the principles of human factors/ergonomics, and anthropometrics relationship to environmental design, and metrological analysis through assignments and practices.

Learning Outcomes: Upon successful completion of the course, students will be able to:

- Explain the relevance of human factors and anthropometrics to environmental design.
- Explain the importance of ergonomic design in the built environment.
- Analyze anthropometric dimensions for designing interior spaces and products for children, men, women, elderly and physically challenged individuals.
- Demonstrate design analysis that follows the principles of human factors/ ergonomics

Language: English, every one drive load should be english.

- Recommended Text Books:**
1. Neufert, E. (2018) Neufert Yapı Tasarımı, 2nd edition, ISBN: 6053339571
 2. Toka, C. İnsan-Araç Bağlantısında Ergonomik Tasarım İlkeleri, MSÜ Yayınları.
 3. Grandjean, E., (1973) Ergonomics of the Home, Taylor and Francis
 4. Sanders, M.M. & McCormick, E.J. (1993) Human Factors in Engineering & Design, 7th ed. McGrawHill, NY.
 5. Pheasant, S., (2000) Bodyspace, Taylor and Francis
 6. Panero, J. & Zelnick, M. (1979). Human Dimension and Interior Space: A Source Book of Design Reference Standards, Watson-Guptill.
 7. Salvendy, G. (2006). Hand book of Human Factors and ergonomics, 3rd edition, Wiley. Lang, J. (1987). Lang, J. (1987). Creating architectural theory: The role of the behavioral sciences in environmental design, NY: Van Nostrand Reinhold.
 8. Pheasant, S. & Haslegrave, C. (2005) Body space: Anthropometry, Ergonomics and the Design of Work, 3rd edition, CRC.
 9. Ulijaszek, S. & Mascie-Taylor, N. (1994) Anthropometry: The Individual and the Population (Cambridge Studies in Biological and Evolutionary Anthropology) Cambridge University Press. Alvin R. Tilley (2001). The Measure of Man and Woman: Human Factors in Design, Henry Dreyfuss Associates

Planned Learning Activities and Teaching Method: This is an elective course and students learn about ergonomics by getting directly involved in the process with the workshops. The lecture is supported by workshops, one drive loads, posters made by the student and group/one-to-one critic sessions.

Lecture necessities: The expected learning outcomes for the course will be assessed through: Group/one to one presentation, submissions, class assignments, one drive loads, posters, workshops, which are the indicators of a successful project process. One drive adress will be sent to the students at the second week.

Class Participation: Regular attendance of all enrolled classes is expected. Do not be late to the class. **Attendance will be taken through your signature within the first quarter of the class; if you come later you will be considered half-attended.** At the end of the Semester, your attendance will be reported on UBS system. Attendance is compulsory and in case of absenteeism of more than **20% for the practice and %30 for the theory, the system will automatically grade you "FF"**. If you miss a class, it is your responsibility to 'make up' all work, including items discussed in class.

Academic integrity & plagiarism: Academic integrity is the pursuit of scholarly activity based on the values of: honesty, trust, fairness, respect and responsibility. Practicing academic integrity means never plagiarizing or cheating, never misrepresenting yourself, never falsifying information, never deceiving or compromising the work of others. Basically this means, either intentionally or unintentionally, using the words or ideas of someone else without giving credit, it's strictly forbidden.

Course Text books: There is no specific textbook for this course. Students are required to study the recommended reading textbooks.

Key Words: Ergonomic, ergonomic design, human comfort, human health.

Specific Rules:

1. Be punctual. Punctuality is a sign of respect toward yourself and the others.
2. Show respect for all the people and property around you.
3. Be responsible for your actions and meet all expectations.
4. Follow directions the first time they are given.
5. Students should use the Internet at school for academic purposes only.
6. It is forbidden to record classes with any type of device.

Communication: Students are encouraged to visit the professor during their Office Hours. If you cannot make it to announced office hours, please make individual arrangements via e-mail. However, do not expect the professor and the research assistant to respond at length via e-mail to questions of content, definition of terms, grading questions etc. If you have a question that requires a substantive response, please set up an appointment to speak with one of us.

**Course Contents*:
(Weekly Lecture
Plan)**

Date	Week	Chapter Topic	Take-home exercise
16.09.2019	1	Introducing Ergonomics, welcome and content details, definition, context and history of ergonomics	
23.09.2019	2	Measuring human dimensions	One drive load: Measure the dimensions of a person according to the paper that is given by the lecturer.
30.09.2019	3	Anthropometric measures and procedure for anthropometric design. Measurement of each other	One drive load: Draw Le-corbusier's modulator man to a blank postcard (give dimensioning). Paint it as however you like.
07.10.2019	4	Important anthropometric data for disabled in interior design. Modulator man model making	One drive load: Find a disabled person, ask her/him about the 5 problems and make 5 diagrams about it.
14.10.2019	5	Importance of ergonomics in furniture design Modulator man model making	One drive load: Choose a furniture picture from the internet and make a poster about why you would want to have this furniture.
21.10.2019	6	Work posture Modulator man model making	One drive load: Talk to your 5 instructors about the problems they have at the university and write at least 200 word letter about it to the dean.
28.10.2019	7	Review Modulator man delivery	One drive load: Find an object from your house and make it more ergonomic by sketch
04.11.2019	8	No-class	
11.11.2019	9	The concept of comfort; relationship between comfort concept and ergonomic design in interior design. Ergonomic object model-making	One drive load: Take a tour at the nearest hospital. Think about what bothers you in this place and how it could be better. Write 200 words about it.
18.11.2019	10	Illumination Ergonomic object model-making	One drive load: Buy or find a little lamp. Learn about its properties from the buyer (what kind, its battery life, light color, etc.) Make a little poster (A5) about it.

25.11.2019	11	Noise control Ergonomic object model-making	One drive load: Visit the new restaurant building at ABU. How is the acoustics? Draw one diagram about how it made you feel.
02.12.2019	12	Interior weather conditions. Ergonomic object model-making	One drive load: In what place have you feel hot or cold? Have you ever smell a bad odor? Draw a picture of yourself about exactly that time.
09.12.2019	13	Radiation factors Ergonomic object model-making	One drive load: Find the objects that make radiation at your house. Write them down.
16.12.2019	14	Ergonomic object delivery and presentation	
Will be announced		FINAL SUBMISSION	Find 10 people who works at the office and survey them. Write a report about them.

* PLEASE NOTE: Details of the syllabus and course schedule are subject to minor changes that will be announced in class.

Grading: Final submission, attendance and one drive loads will be evaluated for accuracy, thoughtfulness and clarity. Assignments will be evaluated for content, quality of ideas and clarity of presentation (including both writing and pictures). It is strictly forbidden to delete any post from the one drive. If total assessment grade is lower than CC, student need to repeat the course.

The final grading will be as follows:

- Attendance to the lesson. Not only being there as a member but participating to the class and to the workshops actively (10%)
- Modulator man delivery (10%)
- Ergonomic object delivery (10%)
- One drive loads. Every homework should be loaded to the system before the class. Student should be ready for the presentation. (30%)
 - 23.09.2019 homework (%3)
 - 30.09.2019 homework (%3)
 - 07.10.2019 homework (%2)
 - 14.10.2019 homework (%3)
 - 21.10.2019 homework (%3)
 - 28.10.2019 homework (%3)
 - 11.11.2019 homework (%3)
 - 18.11.2019 homework (%3)
 - 25.11.2019 homework (%3)
 - 02.12.2019 homework (%1)
 - 09.12.2019 homework (%3)
- Final submission (%40)

FINAL SUBMISSION: Find 10 people who works at the hospital and survey them. Write a 200 word report about them. (Arial Narrow, 12 punto, text evenly between the margiins.)

**Assessment Methods
and Criteria :**

METHODS	EFFECTS ON GRADING
Attendance and Participation	10%
One drive loads	30%
Modulor man	10%
Ergonomic object model making	10%
Final submission	40%

ECTS Workload Table :

ACTIVITIES	NUMBER	HOUR	WORKLOAD
Course Teaching Hours	13	1	13
Workshop	9	1	9
Homework	11	2	22
Presentations	10	1	10
Final submission preparation	5	4	20
Final submission	1	1	1
Total workload/25			75/25
ECTS			3

GRADING AND EVALUATION

The students' progress will be evaluated throughout the semester. Students' grades lower than CC will be considered as failed.

Grade Scale:

90 - 100	AA	4,00
85 - 89	BA	3,50
80 - 84	BB	3,00
75 - 79	CB	2,50
65 - 74	CC	2,00
55 - 64	DC	1,50
50 - 54	DD	1,00
45 - 49	FD	0,50
0 - 44	FF	0,00

Course outline and evaluation criteria can be changed according to weekly progress by course instructor. If any change will occur, it will announce to students via e-mail.