

General Information:

Curriculum:	Civil Engineering BSc
Name of Course:	ERGONOMICS
Course Code:	SZB056AN
Semester:	2th, 4th, 6th, 8th
Number of Credits:	2
Allotment of Hours per Week:	2 Practical Lessons /Week
Evaluation:	mid semester grade
Prerequisites:	no

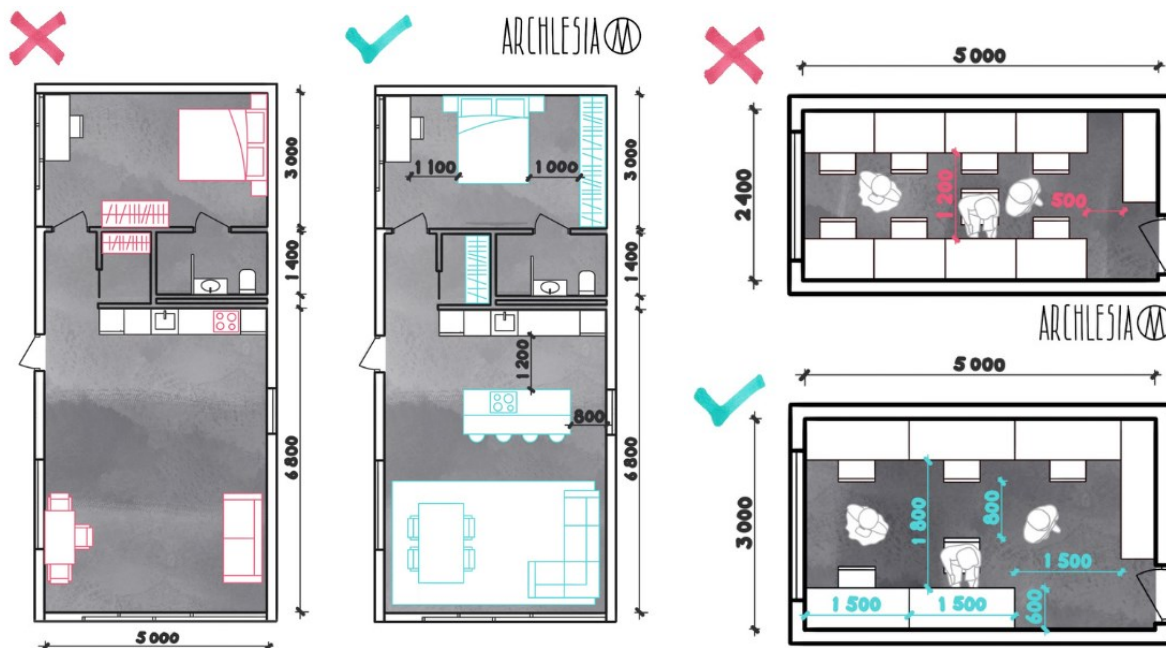
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General Subject Description

Ergonomics is the scientific discipline dealing with work processes and their economical utilization with the least possible human effort. Deliberately, ergonomic design takes the characteristics of the human body and the soul into account. Ergonomically designed products do not affect the user's body or soul – that is, when a product or a tool is devised, the designer considers that it will be used by people, and so every human factor, every possible aspect is examined – potential users, why and on what purpose they will use the product, etc. (e.g. anatomy, product psychology).

Ergonomics deals with interactions between users and their equipment as well as with man – machine - environment interactions. The main goal of ergonomics is to design equipment and devices that fit the human body and its cognitive abilities. It is essential that the tool does not affect people, neither mentally nor physically.

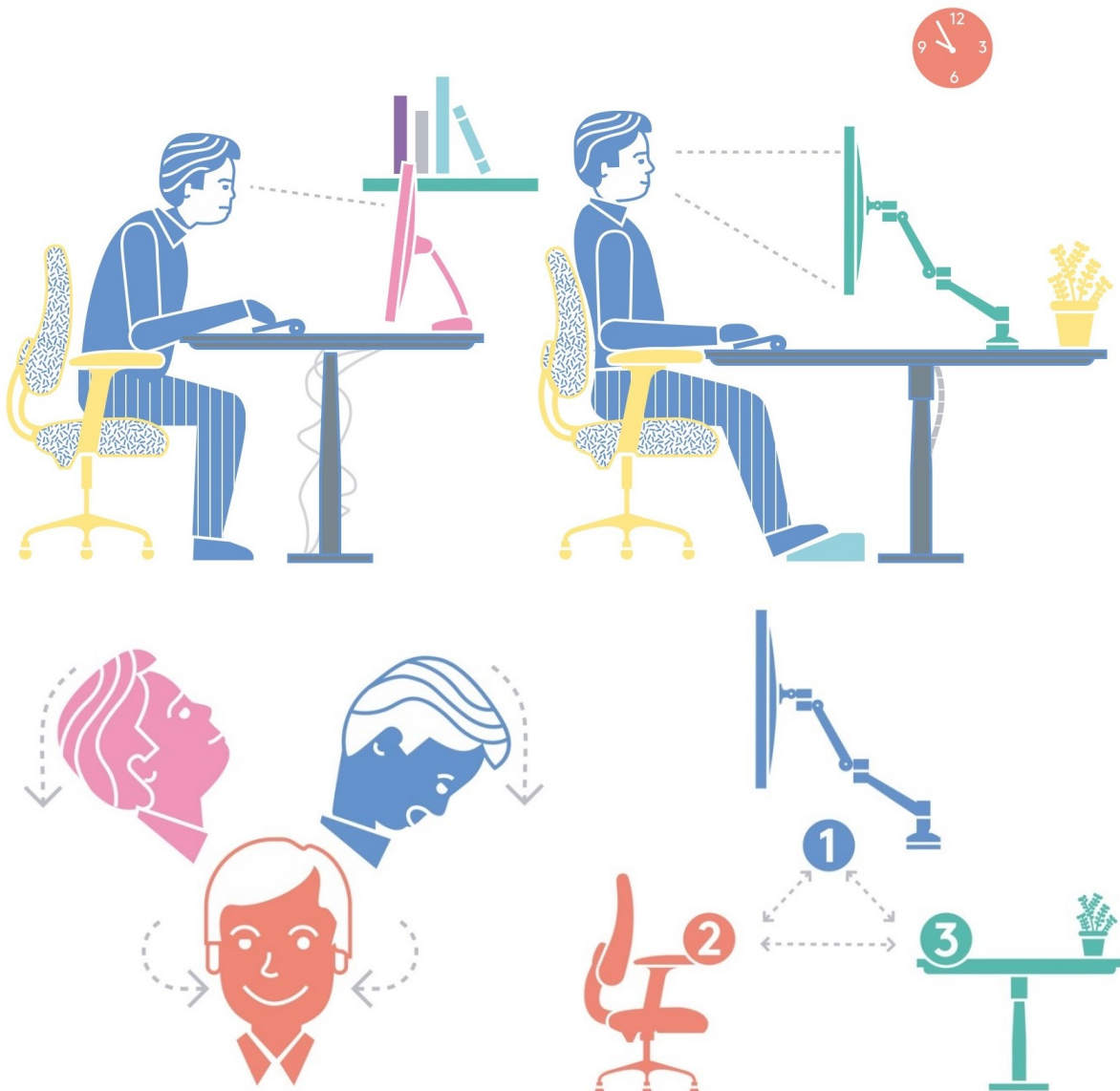


Learning Outcomes

„Ergonomics is the scientific study of humans and their environment. Work environment is not limited to physical work environment attributes but it involves tools and materials used for work as well as methods and organization of both individual or group-level work - all these interact with people: with their abilities, possibilities and limitations.” (Murrell, 1965)

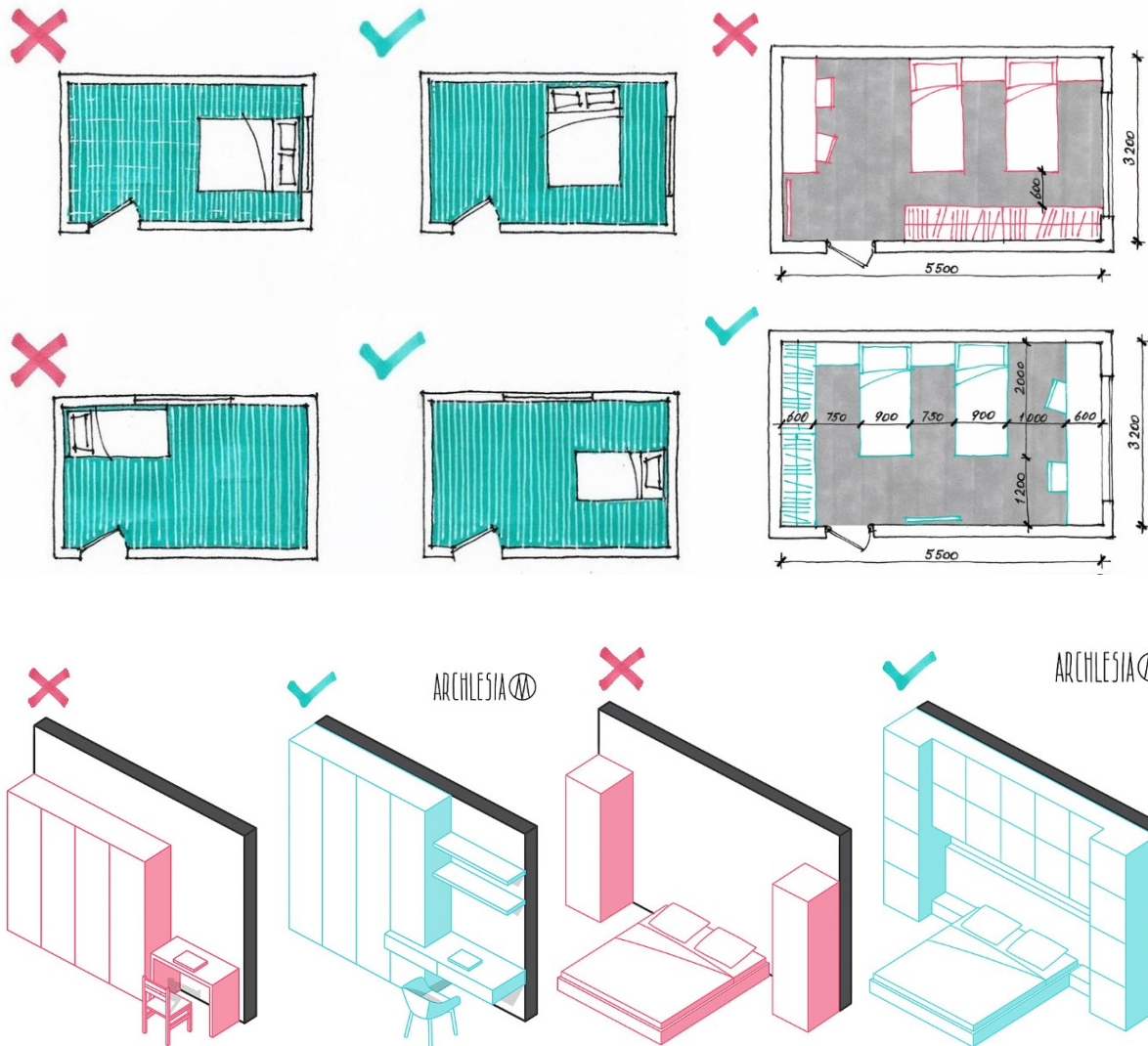
The course will focus on:

- What is Ergonomics
- What does the word 'Ergonomics' mean
- Why is Ergonomics important
- What is a musculoskeletal disorder
- Ergonomics injury
- What are the advantages of Ergonomics
- Ergonomics risk factors
- Controlling risk factors



Subject content

Brief Syllabus: This lecture and practical based course aims to give the basic knowledge about Ergonomics and to show the possibilities of the planning. There will be comparisons between the traditional and new methods. A lot of example will be presented to give the expected knowledge to the students.



Examination and evaluation system

In all cases. Annex 5 of the Statutes of the University of Pécs, the **Code of Studies and Examinations (CSE) of the University of Pécs** shall prevail.

<https://english.mik.pte.hu/codes-and-regulations>

https://international.pte.hu/sites/international.pte.hu/files/doc/TVSZ%202022_06_23_ENG.pdf

Attendance

In accordance with the Code of Studies and Examinations of the University of Pécs, Article 45 (2) and Annex 9. (Article 3) a student may be refused a grade or qualification in the given full-time course if the number of class absences exceeds 30% of the contact hours stipulated in the course description.

Method for monitoring attendance (e.g.: attendance sheet / online test/ register, etc.)

Assessment

Course resulting in mid-term grade (PTE TVSz 40§(3))

Mid-term assessments, performance evaluation and their ratio in the final grade

Type	Assessment	Ratio in the final grade
home assignment	85 points	85 %
participation	15 points	15 %

Grading will follow the course structure with the following weight: home assignment 85%. The remaining 15% will be assessed according to participation, progress, effort and attitude. Please note that attendance will adversely affect one's grade, both in direct grade reduction and in missing work in the development of a project.

Opportunity and procedure for re-takes (PTE TVSz 47§(4))

The specific regulations for improving grades and resitting tests must be read and applied according to the general Code of Studies and Examinations. E.g.: all tests and assessment tasks can be repeated/improved at least once every semester, and the tests and home assignments can be repeated/improved at least once in the first two weeks of the examination period.

Requirements for the end-of-semester signature

Reach the minimum points and fulfill attendance requirements.

https://international.pte.hu/sites/international.pte.hu/files/doc/TVSZ%202022_06_23_ENG.pdf

Grading Scale:

Numeric Grade:	5	4	3	2	1
	A, excellent	B, good	C, average	D, satisfactory	F, Fail
Evaluation in points:	85%-100%	70%-85%	55%-70%	40%-55%	below 40%

The lower limit given at each grade belongs to that grade.

Readings and Reference Materials

Required:

[1.] Horváth Magdolna Horvath dr., Tamás Turi: Ergonomics, Ergonomics – Accessibility (Zenfe) Pecs, 2014.

More:

[2.] Hercegi K., Izsó L.: Ergonómia. Typotex Kiadó, Budapest, 2007.

[3.] Magyar Szabványügyi Hivatal: Ergonómiai szabványosítási dokumentum (tervezési irányelvek), MI-17230 „Ergonómia. Fogalmak és meghatározások”

[4.] Dr. Horváth L. G.: Ergonómia, Tankönyvkiadó, Budapest, 1976.

[5.] Klein S.: Munkapszichológia. Edge 2000 Kft., 2003.

[6.] Ungváry GY.: Munkaegészségtan. Budapest, 2000.

[7.] Balogh D.: Testreszabott KONYHA – konyhatervezés az ergonómia jegyében, netAdmin, 2008.

[8.] J. Nielsen: Webergonómia, Typotex Elektronikus Kiadó Kft., 2011.

[9] Resolution ResAP(2001)1 on the introduction of the principles of universal design into the curricula of all occupations working on the built environment ("Tomari Határozat")

Methodology

On the lectures the students get information about the theoretical knowledge of Ergonomics and they can use this information at the practices during the analysis processes.

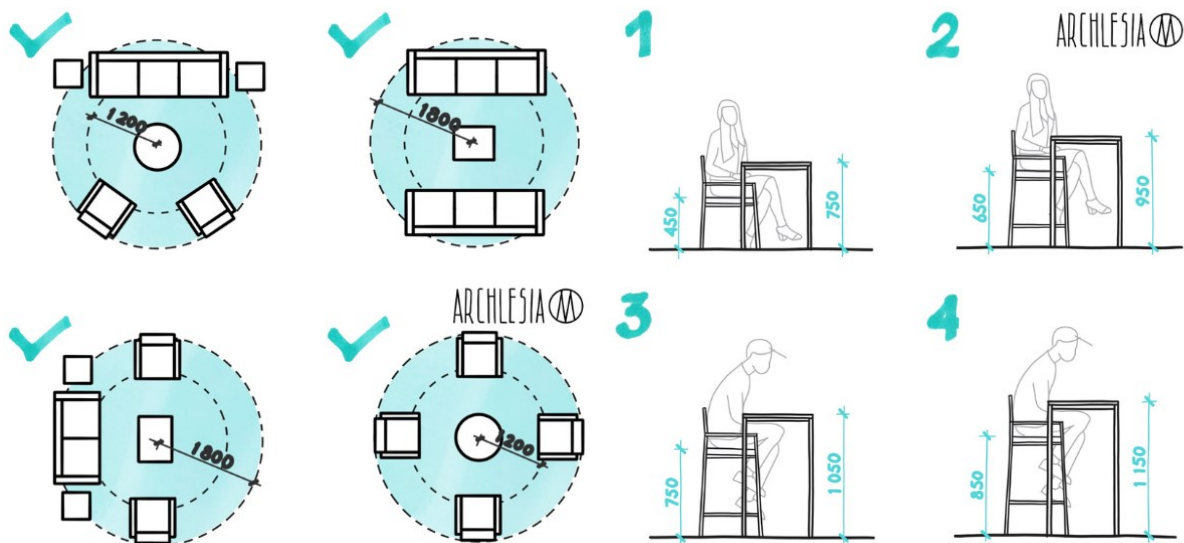
Students with Special Needs

Students with a disability and needs to request special accommodations, please, notify the Deans Office. Proper documentation of disability will be required. All attempts to provide an equal learning environment for all will be made.

Detailed requirements and schedule of the Course

The semester project must be a workplace ergonomics analysis.

- Space sheet (type of workplace...)
- Data collection (layout, users, activity...)
- Evaluation - development aspects (physical design, positive points, functions of premises, accessibility...)
- Development (special needs, redesign...)
- Anthropometric survey (people and subject, assessment...)
- Literature used



Final submission:

Project file must be submitted in pdf format until the deadline. The final file has to be sent **Microsoft TEAMS groupe**.

Submission deadline: 10th of May 2023

Extended deadline: 14th of May 2023

The file must be named by using name of the student, and Neptune code as it is shown in the following example: first name_last name_neptuncode.pdf

Schedule

Practice/Laboratory Practice

week	Topic	Progress requirements for the home assignment	Required tasks (assignment s, tests, etc.)	Completion date, due date
1.	Introduction of the syllabus			
2.	Principles of Ergonomics - Introduction to Ergonomics - Concept of Ergonomics - Main Development Stages of Ergonomics - Principles, History, Aspects and Methods of Ergonomics - Comprehension Test – Principles of Ergonomics	Horváth Magdolna Horvath dr., Tamás Turi: Ergonomics, Ergonomics – Accessibility page 9-16	Consultation	Course time

3.	<p>Ergonomic Design</p> <ul style="list-style-type: none"> - Basic Ergonomic Requirements - Ergonomics and Universal Design - Regulations Pertaining to Universal Design - Comprehension Test – Ergonomic Design 	<p>Horváth Magdolna Horvath dr., Tamás Turi: Ergonomics, Ergonomics – Accessibility page 17-26</p>	<p>Consultation</p>	<p>Course time</p>
4.	<p>History of Application of Ergonomic Approaches</p> <ul style="list-style-type: none"> - Antecedents and Initial Phases of the Application of Ergonomics - Development of Ergonomic Fields and their Practice - Comprehension Test – History of Application of Ergonomic Approaches 	<p>Horváth Magdolna Horvath dr., Tamás Turi: Ergonomics, Ergonomics – Accessibility page 27-33</p>	<p>Consultation</p>	<p>Course time</p>
5.	<p>Historical Development of Ergonomics</p> <ul style="list-style-type: none"> - Development of Ergonomics - History of Ergonomics from the Start up to the Present Day - Development Trends and Future Prospects in Ergonomics - Comprehension Test – Historical Development of Ergonomics 	<p>Horváth Magdolna Horvath dr., Tamás Turi: Ergonomics, Ergonomics – Accessibility page 34-39</p>	<p>Consultation</p>	<p>Course time</p>
	<p>Objectives and Tasks of Ergonomics</p> <ul style="list-style-type: none"> - Objectives of Ergonomics - Tasks and Importance of Ergonomics - Importance and Situation of Ergonomic Design in Europe and in Hungary - Human- and Product-Centered Design <p>Comprehension Test – Objectives and Tasks of Ergonomics</p>	<p>Horváth Magdolna Horvath dr., Tamás Turi: Ergonomics, Ergonomics – Accessibility page 40-45</p>	<p>Consultation</p>	<p>Course time</p>
7.	<p>Ergonomics and Accessibility</p> <ul style="list-style-type: none"> - Ergonomics as a Multidisciplinary Field - Ergonomics and Related Scientific Disciplines - Ergonomics and Accessibility - Comprehension Test - Ergonomics and Accessibility 	<p>Horváth Magdolna Horvath dr., Tamás Turi: Ergonomics, Ergonomics – Accessibility page 46-52</p>	<p>Consultation</p>	<p>Course time</p>
8.	<p>Application Areas of Anthropometry</p> <ul style="list-style-type: none"> - Anthropometry - Role and Development of Anthropometry - Application Areas of Anthropometry - Comprehension Test – Application Areas of Anthropometry <p>Anthropometric Aspects</p> <ul style="list-style-type: none"> - Human Body Parameters and Ranges of Motion - Static and Dynamic Anthropometry - Anthropometric Aspects in Ergonomic Analysis and Design <p>Comprehension Test – Anthropometric Aspects</p>	<p>Horváth Magdolna Horvath dr., Tamás Turi: Ergonomics, Ergonomics – Accessibility page 53-62 page 63-68</p>	<p>Consultation</p>	<p>Course time</p>
9.	<p>HOLIDAY</p>			

10.	Methodology in Ergonomics - Methodology in Ergonomics - Evaluation Areas and Methods of Ergonomics - Major Branches of Ergonomics - Comprehension Test – Methodology in Ergonomics	Horváth Magdolna Horvath dr., Tamás Turi: Ergonomics, Ergonomics – Accessibility page 69-75	Consultation	Course time
11.	Workplace Ergonomics - Ergonomic Requirements in the Workplace - Workplace Ergonomics and Environmental Safety - Theoretical and Methodological Fundamentals of the Design and Analysis of Work - Comprehension Test – Workplace Ergonomics	Horváth Magdolna Horvath dr., Tamás Turi: Ergonomics, Ergonomics – Accessibility page 76-82	Consultation	Course time
12.	Ergonomics in Product Design - Ergonomic Quality of Products and Workplaces - Ergonomics in Product Design, Product - User Interactions - Ergonomics and Product Quality - Comprehension Test – Ergonomics in Product Design 'Design for all' - Ergonomics for Groups with Special Needs - 'Design for all' - Design for Users with Special Needs - Ergonomic Principles Related to the Physical Environment - Comprehension Test - 'Design for all'	Horváth Magdolna Horvath dr., Tamás Turi: Ergonomics, Ergonomics – Accessibility page 83-97	Consultation	Course time
13.	SEMESTER PROJECT SUBMISSION			27th of Nov 2024
14.	POST - SEMESTER PROJECT SUBMISSION			4th of Dec 2024

30.08.2024

Magdolna HORVATH dr.
responsible lecturer