COURSE SPECIFICATION

Coursecode	full-timeprogramme:	**M#2-S1-ME-103**
	part-time programme:	
CoursetitleinPolish	**Ergonomia i BHP**	
CoursetitleinEnglish	**Ergonomics and Occupational Safety and Health**	
Validfrom (academicyear)	**2024/2025**	

GENERAL INFORMATION

Programme of study	**MECHANICAL ENGINEERING**
Level of qualification	**first-cycle**
Type of education	**academic**
Mode of study	**full-timeprogramme**
Specialism	**all**
Department responsible	**Department of Automotive Engineering and Transport**
Course leader	**Dr inż. Dariusz Kurczyński**
Approved by	**dr hab. Jakub Takosoglu, prof. PŚk, Dean of theFaculty of Mechatronics and Mechanical Engineering**

COURSE OVERVIEW

Coursetype		**basic**
Course status		**compulsory**
Language of instruction		**English**
Semester of delivery	full-timeprogramme	**Semester I**
	part-time programme	
Pre-requisites		
Examinationrequired (YES/NO)		**NO**
ECTS value		**1**

Mode of instruction		**lecture**	**class**	**laboratory**	**project**	**seminar**
No. of hours per semester	full-timeprogramme	**15**				
	part-time programme					

LEARNING OUTCOMES

Category of outcome	**Outcomecode**	**Course learning outcomes**	**Correspondingprogrammeoutcomecode**
Knowledge	W01	The student knows basic issues in the field of ergonomics, ergonomic design and requirements for products.	**MiBM1_W19**

	W02	The student has knowledge about the labor protection system in Poland and knows the basic rights and obligations in the field of occupational health and safety.	**MiBM1_W19**
	W03	The student has basic knowledge about the threats arising from the work performed.	**MiBM1_W19**
Skills	U01	The student is able to search for sources of information on the design of products of the required ergonomic quality, labor law and the principles and requirements related to the development of safe and hygienic working conditions.	**MiBM1_U03**
Competence	K01	The student is aware of the threats arising from the work performed and understands the need to take into account human capabilities and limitations when designing technical products. Understands the need to comply with the requirements for creating safe working conditions.	**MiBM1_K02**

COURSE CONTENT

Type of instructionlecture	Topicscovered
lecture	Introduction to the subject. Literature of the subject. Discussion of the concept, scope and purpose of ergonomics. Conceptual ergonomics. Corrective ergonomics. Ergonomics of working conditions. Ergonomics of products. The elementary ergonomic system: human-technical object-environment. Ergonomic design. Issues solved in the ergonomic design process. Phases of product existence. Methods of shaping the spatial structure of a workplace. Basic ergonomic principles in product design and evaluation. Laws and standards in ergonomic design. Categories of ergonomic requirements. Sources of information on ergonomic product design and safe in use. Centile and centile characteristics to describe anthropometric data of the human population. NEW AND GLOBAL APPROACH applied to products in the European Union and its basic principles. CE marking. Work process. Physical work and mental work. Assessment of human workload. Physiological effect of human workload. Factors affecting the fatigue process. Symptoms of physical fatigue and symptoms of mental fatigue. Occupational risks and their sources and effects. Occupational diseases. Selected legal regulations in the field of labour law concerning safety and hygiene at work. The system of labour protection in Poland. Basic obligations of the employer, employees and persons in charge of employees in the scope of safety and hygiene at work. Liability for offences against employee rights. Management of safety and health at work. Organisation and methodology of training in occupational safety and health and the formation of safe behaviour of employees in the work process. Preventive health care for employees. Supervision and control of working conditions. Components of the material working environment. Harmful, arduous and dangerous factors in the working environment.

ASSESSMENT METHODS

Outcomecode	Methods of assessment*(Mark with an X whereapplicable)*					
	Oralexamination	Writtenexamination	Test	Project	Report	Other
W01			X			
W02			X			
W03			X			
U01			X			

K01			X			

ASSESSMENT TYPE AND CRITERIA

Mode of instruction	Assessmenttype	Assessmentcriteria
lecture	non-examinationassessment	Test in written form. During the test, students answer questions in writing. Each answer is graded on a scale from 0 to 5 points. The sum of the points for the answers determines the grade obtained. A grade of 3.0 requires a minimum of 50% of the points from the test. A grade of 3.5 requires a minimum of 60% of the points from the test. A grade of 4.0 requires a minimum of 70% of the points from the test. A grade of 4.5 requires a minimum of 80% of the points from the test. A grade of 5.0 requires a minimum of 90% of the points from the test.

OVERALL STUDENT WORKLOAD

ECTS weighting												
No.	Activitytype	Student workload										Unit
		full-timeprogramme					part-time programme					
		L	C	Lb	P	S	L	C	Lb	P	S	
1.	Scheduledcontacthours	15										h
2.	Othercontacthours (officehours, examination)	2										h
3.	**Total number of contacthours**	**17**										h
4.	**Number of ECTS credits for contacthours**	**0,7**										ECTS
5.	**Number of independent studyhours**	**8**										h
6.	**Number of ECTS credits for independent studyhours**	**0,3**										ECTS
7.	**Number of practicalhours**	**0**										h
8.	**Number of ECTS credits for practicalhours**	**0,0**										ECTS
9.	**Total study time**	**25**										h
10.	**ECTS credits for thecourse** *1 ECTS credit = 25-30 hours of study time*	**1**										ECTS

READING LIST

1. Engel Z., Ochrona środowiska przed drganiami i hałasem. Wydawnictwo Naukowe PWN, Warszawa 2001.
2. Ergonomia produktu. Ergonomiczne zasady projektowania produktów. Praca pod redakcją Jana Jabłońskiego, Wydawnictwo Politechniki Poznańskiej, Poznań 2006.
3. Ergonomia z elementami bezpieczeństwa pracy,Praca zbiorowa pod redakcją Wiesławy M. Horst. Wydawnictwo Politechniki Poznańskiej, Poznań 2006.
4. Gedliczka A. i inni, Atlas miar człowieka. Dane do projektowania i oceny ergonomicznej, Wydawnictwo Centralnego Instytutu Ochrony Pracy, Warszawa 2001.

5. Górska E, Tytyk E., Ergonomia w projektowaniu stanowisk pracy. Podstawy teoretyczne. Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 1998.
6. Horst W. M., Ryzyko zawodowe na stanowisku pracy. Cz. 1, Ergonomiczne czynniki ryzyka. Wydawnictwo Politechniki Poznańskiej, Poznań 2004.
7. Horst W. M., Horst N., Ergonomia z elementami bezpieczeństwa i ochrony zdrowia w pracy. Wprowadzenie. Wydawnictwo Politechniki Poznańskiej, Poznań 2011.
8. Horst W. M., Horst N., Ergonomia z elementami bezpieczeństwa i ochrony zdrowia w pracy. Zasady i wymagania związane z indywidualnymi cechami człowieka. Wydawnictwo Politechniki Poznańskiej, Poznań 2011.
9. Horst W. M. i inni, Ergonomia z elementami bezpieczeństwa i ochrony zdrowia w pracy. Zasady i wymagania związane z odbiorem i przetwarzaniem bodźców. Wydawnictwo Politechniki Poznańskiej, Poznań 2011.
10. Horst W. i inni, Ergonomia z elementami bezpieczeństwa i ochrony zdrowia w pracy. Zasady i wymagania związane z materialnym środowiskiem pracy. Wydawnictwo Politechniki Poznańskiej, Poznań 2011.
11. Ignac-Nowicka J., Ergonomia i higiena przemysłowa. Wykłady. Wydawnictwo Politechniki Śląskiej, Gliwice 2017.
12. Knapik St., Ergonomia i ochrona pracy. Wydawnictwa AGH, Kraków 1996 r.
13. Koradecka D.,Bezpieczeństwo i higiena pracy. Wydawnictwa Centralny Instytut Ochrony Pracy-Państwowy Instytut Badawczy, Warszawa 2008.
14. Nowak E., Atlas antropometryczny populacji polskiej – dane do projektowania. Instytut Wzornictwa Przemysłowego, Warszawa 2000.
15. Rączkowski B., BHP w praktyce. Wydawca: Ośrodek Doradztwa i Doskonalenia Kadr Sp. Z o.o., Gdańsk 2012.
16. Rozporządzenie Ministra Pracy i Polityki Socjalnej z dnia 26 września 1997 r. w sprawie ogólnych przepisów bezpieczeństwa i higieny pracy.
17. Rozporządzenie Ministra Gospodarki i Pracy z dnia 27 lipca 2004 r. w sprawie szkolenia w dziedzinie bezpieczeństwa i higieny pracy, wraz z późniejszymi zmianami.
18. Rozporządzenie Ministra Zdrowia i Opieki Społecznej z dnia 30 maja 1996 r. w sprawie przeprowadzenia badań lekarskich pracowników, zakresu profilaktycznej opieki zdrowotnej nad pracownikami oraz orzeczeń lekarskich do celów przewidzianych w Kodeksie pracy, wraz z późniejszymi zmianami.
19. Ustawa Kodeks Pracy.
20. Wieczorek S., Ergonomia. Wydawca: TARBONUS Sp. z o.o. Kraków-Tarnobrzeg 2010.
21. Wojciechowska-Piskorska H., Szkolenie okresowe dla pracodawców i innych osób kierujących pracownikami. Wydawca: Ośrodek Doradztwa i Doskonalenia Kadr, Gdańsk 2006.
22. Wykowska M., Ergonomia, Wydawnictwa AGH, Kraków, 1994.