COURSE DESCRIPTION CARD - SYLLABUS

Course name
Materials and technologies in food production and trade

Course

Field of study
Mechanics and vehicle construction

Year/Semester
2/2

Area of study (specialization)
Refrigerated vehicles

Profile of study
general academic

Level of study
Second-cycle studies

Course offered in
polish

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture	Laboratory classes	Other (e.g. online)
15	0	0
Tutorials	**Projects/seminars**	
15	0	

Number of credit points

1

Lecturers

Responsible for the course/lecturer:
dr hab. inż. Łukasz Wojciechowski

email: lukasz.wojciechowski@put.poznan.pl

tel. 61 665 2376

Wydział Inżynierii Lądowej i Transportu

ul. Piotrowo 3, 60-965 Poznań

Responsible for the course/lecturer:
dr inż. Kasper Górny

email: kasper.gorny@put.poznan.pl

Wydział Inżynierii Lądowej i Transportu

Instytut Maszyn Roboczych i Pojazdów Samochodowych

ul. Piotrowo 3, 60-965 Poznań

Prerequisites

Knowledge: the student has basic knowledge of materials engineering and construction technology machines

Skills: the student has the ability to self-study, is able to synthesize the collected information and formulate conclusions

Social competences: the student is aware of the responsibility for the decisions made.

Course objective

Learning about materials and technologies in the production and trade of food, with particular emphasis on specific problems in the selection of construction and operating materials.

Course-related learning outcomes

Knowledge

Has extensive knowledge of the processes taking place in the surface layer of machine structural elements and surface engineering methods.

Has knowledge of the principles of safety and ergonomics in the design and operation of machines and the threats that machines pose to the natural environment.

Has extended knowledge of modern construction materials such as carbon plastics, composites, ceramics, in terms of their construction, processing technology and applications.

Skills

He can correctly select the optimal material and its processing technology for typical parts of working machines, taking into account the latest achievements in material engineering.

Is able to use the acquired knowledge in the field of thermodynamics and fluid mechanics to simulate thermodynamic processes in technological systems of machines, using specialized computer programs.

He can advise on the selection of machines for the technological line as part of the specialization.

Social competences

It is ready to fulfill social obligations, inspire and organize activities for the benefit of the social environment.

It is ready to initiate actions for the public interest.

Is willing to think and act in an entrepreneurial manner.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

written test, laboratory reports

Programme content

Legal regulations concerning the production and sale of food. Supervision over the hygiene of production and trading food (systems: GMP, GHP, HACCP). Basics of the selection of consumables (oils and lubricants, working fluids, washing and disinfecting agents). Characteristics of individual groups of consumables in the production and trade of food. Selected properties and specifications technological technology of materials in the production and trade of food. General basics of machining design subtle. Technologies of difficult-to-cut materials. Protective coating technologies. Technologies bonding specific materials. Examples of technologies in food production and trade.

Teaching methods

Lecture with a multimedia presentation, Laboratories - problem methods (case study, situational, expert table method)

Bibliography

Basic

1. Leda H. Wybrane metalowe materiały konstrukcyjne. Wyd. PP, Poznań 1994

2. Cichoń Z. Nowoczesne opakowalnictwo żywności, Ossolineum, Wrocław 1996

3. Polański Z. Optymalizacja w technologii maszyn. WNT, Warszawa 1996

4. Grzesik W. Podstawy skrawania materiałów metalowych, WNT, Warszawa 1998

Additional

Breakdown of average student's workload

	Hours	ECTS
Total workload	50	1,0
Classes requiring direct contact with the teacher	30	0,5
Student's own work (literature studies, preparation for tutorials, preparation for tests) [1]	20	0,5

[1] delete or add other activities as appropriate