COURSE DESCRIPTION CARD - SYLLABUS

Course name
Biochemical aspects of food transport [N2MiBP1-PCh>BAPŻ]

Course

Field of study
Mechanical and Automotive Engineering

Year/Semester
1/1

Area of study (specialization)
Refrigerated Vehicles

Profile of study
general academic

Level of study
second-cycle

Course offered in
Polish

Form of study
part-time

Requirements
compulsory

Number of hours

Lecture
9

Laboratory classes
0

Other
0

Tutorials
9

Projects/seminars
0

Number of credit points

1,00

Coordinators

dr inż. Natalia Idaszewska
natalia.idaszewska@put.poznan.pl

Lecturers

Prerequisites

KNOWLEDGE: The student should have basic knowledge of physics, chemistry and biology thermodynamics, electrochemistry, structure, properties and importance for living organisms monosaccharides, amino acids, fatty acids. SKILLS: the student is able to integrate the obtained information, interpret it, extract it conclusions, formulate and substantiate opinions COMPETENCES: the student is aware of the existence of biochemical processes in processing food

Course objective

Understanding the basic metabolic pathways and mechanisms of their regulation.

Course-related learning outcomes

Knowledge:
Has extended knowledge of physics in the field of contemporary physical problems conditioning the progress in technical sciences: solid state physics nonlinear optics, nuclear physics and new research methods used in physics.
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.

Is aware of the civilization effects of technology.

Skills:
Can formulate and test hypotheses related to simple research problems.
Can communicate on specialist topics with a diverse audience.
He is able to independently plan and implement his own learning throughout life and direct others in this regard.

Social competences:
He is ready to critically assess his knowledge and received content.
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.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Learning outcomes presented above are verified as follows:
Discussion, ongoing preparation and activity in the classroom. Written credit for lectures.
Passing written exercises.

Programme content

Lecture topics: Structure and properties of proteins, lipids, carbohydrates and nucleic acids. Enzymes - classification, kinetics, mechanisms of action. Coenzymes and vitamins. Protein metabolism, carbohydrates and lipids, stages of biological oxidation, transmission of genetic information, regulation of metabolic changes, integration of changes in the cell.
Topics of exercise: Properties of amino acids and proteins. Methods for their determination of protein concentration in solution. The influence of some factors on the activity of enzymes. Properties of fats and acids fatty. Properties of carbohydrates.

Course topics

none

Teaching methods

1. Lecture with multimedia presentation
2. Laboratory exercises - solving design tasks

Bibliography

Basic
1. Kączkowski J., 2012. Podstawy biochemii, WNT, Warszawa.
2. Bednarski W., Reps A. 2014. Biotechnologia żywności. WNT, Warszawa.
Additional
1. Dziuba J., Kostyra H., Dziuba M. 2012. Biochemia żywności, UWM. Olsztyn.
2. Praca zbiorowa. Kłyszejko-Stefanowicz L., 2005. Ćwiczenia z biochemii, PWN Warszawa.

Breakdown of average student's workload

	Hours	ECTS
Total workload	30	1,00
Classes requiring direct contact with the teacher	18	0,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	12	0,50