# KARTA PRZEDMIOTU

**Nazwa przedmiotu:** ***Plant molecular biology and physiology (BioAIS-BF>SMs2PMp3O)***
**Nazwa w języku polskim:**
**Nazwa w jęz. angielskim:** ***Plant molecular biology and physiology***

## Dane dotyczące przedmiotu:

**Jednostka oferująca przedmiot:** Wydział Inżynierii Środowiska i Energetyki
**Przedmiot dla jednostki:** Politechnika Śląska

**Domyślny typ protokołu dla przedmiotu:**
ZAL

**Język wykładowy:**
angielski

**Strona WWW:**
https://platforma.polsl.pl/rau1/course/view.php?id=573

**Skrócony opis:**
Basics of prokaryotic cell structure and knowledge about basic cellular metabolism and processes.

**Opis:**
Lectures will cover issues related to the intracellular processes of plants, associated with energy production and essential metabolic pathways. During practical laboratories students will be introduced to issues related to metabolic pathways and bioenergetic processes of the prokaryotic cell.
The lectures will cover:
• Molecular basis of cellular processes
• Intracellular metabolism
• Cell signalling
• Plants transportation
• Plant nutrition and growth
• Physiology of photosynthesis.
Laboratries:
• Flow cytometric assays
• Fluorescent microscopy assays
• In vitro plant cells culture
• Soil micro- and macroelements circuit.

**Literatura:**
Alberts "Cell Biology"
Nicholls i Ferguson ,,Bioenergetics".
Lehninger ,,Biochemistry".
Caroline Bowsher, Alyson Tobin "Plant Biochemistry"

**Efekty uczenia się:**
Student has a broader and wide knowledge about biology, molecular biology and biochemistry (K2A_W01),
Student knows the possibilities of the use of different groups of organisms (bacteria, fungi, plants) in the production of biofuels, with particular emphasis on intracellular metabolism in prokaryotes (K2A_W05, K2A_W09).
Student knows the details of the methods, techniques, technologies, tools and materials, allowing for the use of biological material in bioenergetics - from single molecules through complex molecules, macromolecules into unicellular and multicellular organisms (K2A_W13).
Student has the ability to acquire information about cellular processes and is able to develop its own research issues in the field of bioenergetics K2A_U01, K2A_U04).
Student can make own data analysis and simulation of natural phenomena using advanced theoretical and experimental methods in the course of exercise (K2A_U08, K2A_U09, K2A_U10, K2A_U11, K2A_U12, K2A_U19, K2A_U23).
Student is able to independently make decisions regarding the best solutions to present and defend the proposed solution during exercise (K2A_K02, K2A_K03, K2A_K07).

**Metody i kryteria oceniania:**
Quizzes, exercise written reports (at least 2) for the final grade.

## Przynależność do grup przedmiotów w cyklach:

| Opis grupy przedmiotów | Cykl pocz. | Cykl kon. |
|---|---|---|
| Przedmioty obowiązkowe, 2 stopień, 2 semestr, B ang, studia stacjonarne (BioAIS-BF>2(1)) | 2020/2021-Z | |

## Punkty przedmiotu w cyklach:

**Biotechnologia, stacjonarne II stopnia magisterskie 3 sem. (BioAIS-SM3)**

| Typ punktów | Liczba | Cykl pocz. | Cykl kon. |
|---|---|---|---|
| Europejski System Transferu Punktów (ECTS) | 3 | 2020/2021-Z | |