**Nazwa przedmiotu:**

Analytical Methods in Biotechnology

**Koordynator przedmiotu:**

dr hab. inż. Katarzyna Pawlak, Prof. PW, dr inż. Mariusz Pietrzak

**Status przedmiotu:**

Obowiązkowy

**Poziom kształcenia:**

Studia II stopnia

**Program:**

Biotechnologia

**Grupa przedmiotów:**

Obowiązkowe

**Kod przedmiotu:**

brak

**Semestr nominalny:**

1 / rok ak. 2014/2015

**Liczba punktów ECTS:**

5

**Liczba godzin pracy studenta związanych z osiągnięciem efektów uczenia się:**

-

**Liczba punktów ECTS na zajęciach wymagających bezpośredniego udziału nauczycieli akademickich:**

**Język prowadzenia zajęć:**

polski

**Liczba punktów ECTS, którą student uzyskuje w ramach zajęć o charakterze praktycznym:**

**Formy zajęć i ich wymiar w semestrze:**

|  |  |
| --- | --- |
| Wykład: | 0h |
| Ćwiczenia: | 0h |
| Laboratorium: | 60h |
| Projekt: | 0h |
| Lekcje komputerowe: | 0h |

**Wymagania wstępne:**

brak

**Limit liczby studentów:**

-

**Cel przedmiotu:**

Project - Students select one of the proposed subjects presented as an analytical problem to solve. They are expected to design analytical procedure (on the basis of literature) in aim to determine or identify chosen compound(s) with the special emphasis on matrix composition. The report containing analytical procedure is obligatory for admission of student to an experimental part. The project will include following problems:
- determination of metals, amino acids or other components in
biological tissue,
- determination of metals, dyes or preservatives in food,
- determination of bioactive components in drugs.
Laboratory - Experiments will be carried out by students with minimal control of assistant (short training and safety precautions only). Simple instrumental and classic analytical methods will be proposed as optional in frame of the project:
- Volumetric analysis
- Spectrophotometry
- Capillary electrophoresis
- Liquid chromatography
- Potentiometry
- Voltammetry
Seminary - As a summary students are required to present the aim of the project, procedure, results and conclusions in the form of oral presentation.

**Treści kształcenia:**

Project - Students select one of the proposed subjects presented as an analytical problem to solve. They are expected to design analytical procedure (on the basis of literature) in aim to determine or identify chosen compound(s) with the special emphasis on matrix composition. The report containing analytical procedure is obligatory for admission of student to an experimental part. The project will include following problems:
- determination of metals, amino acids or other components in
biological tissue,
- determination of metals, dyes or preservatives in food,
- determination of bioactive components in drugs.
Laboratory - Experiments will be carried out by students with minimal control of assistant (short training and safety precautions only). Simple instrumental and classic analytical methods will be proposed as optional in frame of the project:
- Volumetric analysis
- Spectrophotometry
- Capillary electrophoresis
- Liquid chromatography
- Potentiometry
- Voltammetry
Seminary - As a summary students are required to present the aim of the project, procedure, results and conclusions in the form of oral presentation.

**Metody oceny:**

Project 50 %, laboratory 20% and oral presentation
30% of total points

**Egzamin:**

nie

**Literatura:**

Analytical and biotechnological journals from data bases like
Elseviere and Springer

**Witryna www przedmiotu:**

-

**Uwagi:**

## Efekty przedmiotowe