

Lp.	Przedmiot	Course	Kod przedmiotu / Code	Język Wykładowy / Language	Semestr / Semester	Punkty ECTS/ Credits	Opis / Description
1.	Systematyka Roślin	Plant Systematics	13.1IV32 AI16_33	angielski / English	letni/ summer	5	History, accuracy and research methods of plant systematics, diversity within groups: algae and vascular plants and the principles of taxonomic literature and herbarium development.
2.	Bioaerazol a zanieczyszczenia powietrza	Bioaerosol and air pollution	13.1IV32AI06_46	angielski / English	zimowy / winter	2	Structure and identification of plant pollen and fungal spores on microscope slides (mostly taxa with allergenic properties). Sampling volumetric method. Influence of meteorological factors on the concentration of pollen grains and airborne fungal spores (wind speed and direction, air temperature, solar radiation, rainfall, humidity). Data analysis - descriptive statistics, Pearson correlation, Spearman rank correlation, multiple regression, advanced statistical models.
3.	Analiza cząstek biologicznych w powietrzu atmosferycznym	Analysis of biological particulate matter in the air		angielski / English	letni/ summer	3	Organisms and biological matter: living organisms, fungal spores, moss spores, fern spores, pollen grain. Particle emission. Monitoring and Quality Assurance and Quality Control. Data transformation, statistical analysis.
4.	Ekologia Behawioralna	Behavioural Ecology		angielski / English	zimowy / winter	2	Sexual selection; sperm competition; cooperative breeding; conflict within families; mating systems; human reproductive behaviour.
5.	Fitogeografia	Phytogeography		angielski / English	letni/ summer	5	The aim of the lecture is to familiarize Students with the problems of development of the vascular plants ranges in the world in particular consider the historical geography of vascular plants.

6.	Choroby wirusowe, bakteryjne i grzybowe roślin	Plant disease and damage diagnostics	13.4IV93.F...27	angielski / English	zimowy / winter	3	The aim of the course is to introduce the student to the issues related to the etiology, symptomatology, epidemiology and pathogenesis of plant diseases caused by biotic factors and effects of influence of abiotic factors on plants.
7.	Roślinne kultury <i>in vitro</i>	<i>In Vitro</i> Culture of Plant	13.1IV23AII05_21	angielski / English	zimowy / winter	3	Types of cultures and <i>in vitro</i> techniques; understanding the rules of operation of sterile plant material and methods of propagation of plants <i>in vitro</i> .
8.	Regulacja rozwoju roślin	Regulation of plant development	13.1IV85AII0_30	angielski / English	letni / summer	4	Aim of the course is to provide students with the overview of significant environmental factors and plant growth regulators which influence plant development. Student will acquire basic knowledge of biosynthesis and action mechanisms of phytohormones. They will analyze chosen parameters of plant development using different laboratory techniques. Students are expected to gain practical skills in manipulation of growth and development of plants at different stages of life cycles.
9.	Embriogeneza somatyczna- mechanizm regulacji	Somatic Embryogenesis – regulating mechanism	13.4IV34AII04_15	angielski	letni / summer	3	Issues connected to the process of somatic embryogenesis with particular emphasis on its induction. Knowledge of techniques to determine changes in the amount of specific transcripts for the induction of somatic embryogenesis and results interpretation
10.	Choroby i diagnostyka uszkodzeń roślin	Plant disease and damage diagnostics	13.4IV93.F...27	angielski / English	zimowy / winter	3	The aim of the course is to introduce the student to the issues related to the etiology, symptomatology, epidemiology and pathogenesis of plant diseases caused by biotic factors and effects of influence of abiotic factors on plants.

11.	Metody badawcze w zoologii kręgowców	Methods of survey in vertebrate zoology		angielski / English	letni / summer	4	Methods of survey in batrachology, herpetology, ornithology and mammalogy. Recognising of the voices of the amphibians and birds. Transects (common breeding birds monitoring) and point count (rapotrs). The combined version of the mapping method, owls monitoring and bats monitoring.
12.	Monitoring i odnowa wód	Monitoring and water restoration		angielski / English	letni/ summer	3	Usage of organisms (macroinvertebrates, zooplankton, ichthyofauna) for ecological state assessing of running and lentic waters Methods for water restoration: ecohydrology, biomanipulation, recultivation. Protection of water in drainage basin.
13.	Biostatystyka	Biostatistics		angielski / English	letni / summer	3	In this introductory statistics course we will explore the use of statistical methodology in designing, analysing, interpreting, and presenting biological experiments and observations. We will cover descriptive statistics, elements of experimental design, probability, hypothesis testing and statistical inference, analysis of variance, correlation, regression techniques, and non-parametric statistical methods. Throughout the course the application of statistical techniques within a biological context will be emphasized, using data from laboratory and field studies.
14.	Fizjologia krwi i podstawy wiedzy o komórkach macierzystych	Physiology of blood and basic knowledge of stem cells		angielski / English	zimowy / winter	5	The aim of this course is to gain basic knowledge of the hematopoietic system and basic information about stem cells Hemolysis. Morphotic and non-morphotic components of blood. Sedimentation of erythrocytes. Erythrocyte. Red blood cell count. Leukocytes. Erythrocytes – blood

							groups. Cross – match blood test. Main principles of blood transfusion. Various types of stem cells - theoretical classes.
15.	Mykologia Kliniczna	Clinical mycology	13.4IV93.S1423 13.4IV93.S1523	angielski / English	zimowy / winter	3	Become familiar with the pathogenic fungi to mammalian species, particularly humans and diagnostics of these fungi. Understanding predisposing factors and predisposing to fungal infections (especially in humans).
16.	Mikrobiologia Środowiskowa	Environmental Microbiology	13.4IV32 AI14_15 13.4IV32 AI15_15	angielski / English	zimowy / winter	4	Get to know the structure and physiology of microorganisms and demonstrate the role of microorganisms in the environment.
17.	Ekologia Drobnoustrojów	Ecology of Microorganisms	13.4IV93.S1514 13.4IV93.S1414	angielski / English	letni/ summer	3	Knowledge of the functioning of microorganisms in the environment, their relationships and their relationships with higher organisms.
18.	Mikrobiologia	Microbiology	13.1IV23AI12_20 13.1IV23AI13_20	angielski / English	letni/ summer	5	Knowledge of the structure and physiology of bacteria, viruses and fungi pathogenic for humans, some animals and products of animal origin. Knowledge of the construction of infectious virus particles. Approximation methods of diagnosis of pathogens
19.	Zoologia Bezkręgowców	Zoology of Invertebrates	13.1IV23AI15_35	angielski / English	letni/ summer	6	Understanding: basics taxonomy and nomenclature of selected groups of invertebrates; basis phylogeny of invertebrates, sample taxa, which are representatives of these groups, and systematic anatomy and morphology of these taxa, the role of selected invertebrates in a variety of ecosystems

20.	Podstawy akarologii	Acarology 1	13.1IV23AI15_22	angielski / English	zimowy / winter	2	Awareness of one of the largest groups of species of microscopic arachnids - mites, their impact on the environment and humans. Getting to know the remarkable morphological diversity of mites reflects both evolutionary past, as well as narrow adaptation to the environment.
21.	Hydrobiologia	Hydrobiology	13.1IV23AI15_10	angielski / English	zimowy / winter	3	Knowledge of the grounds of Hydrobiology, phenomena and processes in biocoenoses and aquatic ecosystems, a review of groups of aquatic organisms, learning the ways of the practical use of Hydrobiology in various aspects of water management.
22.	Fauna bezkręgową wód stojących	Invertebrate fauna of stagnant water	13.1IV32 AI11_07	angielski / English	zimowy / winter	3	Understanding the characteristics of groups of invertebrates inhabiting different types of stagnant waters, including rare species and protected. Introduction to the ecological role of standing water, including a lake's tanks, small reservoirs and wetlands, and the impact of environmental change on the invertebrate fauna of these habitats.
23.	Chemia ogólna i analityczna	Total and Analytical Chemistry	13.3IV32 AI04_02	francuski / French	zimowy / winter	5	Learning to operate the knowledge of the basic concepts of chemistry, laws of chemistry and stoichiometric calculations.

24.	Chemia organiczna	Organic Chemistry	13.3IV34AI06_13	angielski / English	letni/ summer	7	History of organic chemistry. Classification and terminology organic compounds. Introduction to bioorganic compounds. Isomerism. Influence the structure of the organic compounds on their physical and chemical properties. Selected basic reaction mechanisms (e.g. elimination reactions, addition reactions and substitution reactions).
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