

01S1-OWADYZAP

INSECT POLLINATORS

ECTS: 2.0

HOURS PER SEMESTER/WEEK: LECTURES: -/-; CLASSES: 30/2

COURSE CONTENTS

LECTURES: -

CLASSES: Zooidiomy with particular emphasis on entomogamy. Mutual adaptation of flowers and insects. Pollination of crops by bees, evaluation of mutual addictions. The economic aspect of entomogamy. Principles of the functioning of insect societies on the example of bees. The bee family as a biological whole, morphology and biology of *Apis mellifera*. Benefits of the honeybee as a pollinator. The condition of Polish beekeeping and its prospects; the existing threats to the species. Natural resources of wild bees, threats. Bumblebees: diagnostics, characteristics of common species. Bumblebee biology on the example of *Bombus terrestris*. Solitary bees: family characteristics - dominant species in agrocenoses, diagnostics; biology on the instance of *Andrena labialis*. Parasitic bees. Assessment criteria and comparison of the suitability of individual groups of bees. Plant protection and the protection of bee resources. Methods for assessing the degree of sealing of agrocenoses. Principles of bee monitoring in the field. Breeding of selected species, practical use. Revalorization of permanent floristic groups in the context of suitability for pollinating insects, selection of species, examples of "food belt".

EDUCATIONAL PURPOSE: Making students aware of the importance of pollinating insects for the yield of crops. Acquainting with economically important species, the condition of their populations in agrocenoses, threats and methods of stimulating their numbers

LEARNING OUTCOMES

Knowledge. The student has elementary knowledge about the role, importance and use of bees in agrocenoses and the existing threats

Skills. The student knows the existing threats to the population of pollinating insects and how to minimize them. He knows the rules of breeding selected species of bees. Can carry out fundamental analysis of bee monitoring with the use of available statistical tools

Social competences. The student knows the functioning of agrocenoses. He is aware of the necessity to protect plants and animals. Can work in a team.

TEACHING FORMS AND METHODS

Lectures. -

Classes. Auditorium exercises: presentation method with a multimedia presentation, case study.

FORM AND CONDITIONS FOR VERIFICATION OF LEARNING OUTCOMES

Lectures. -

Classes. Written-test - credit with grade, project - credit with a grade.

BASIC LITERATURE

1) Falk S. Field Guide to the bees of Great Britain and Ireland, Bloomsbury Publishing Plc, London, 2016 2) Prabucki J. Pszczelnictwo, wyd. Albatros - Szczecin, 1998, 3) Banaszak J. Ekologia pszczół", wyd. PWN Warszawa, 1993 4) Dylewska M., Nasze trzmielce, wyd. APW Karniowice., 2000

ADDITIONAL LITERATURE

1) Jabłoński B., O potrzebie i możliwościach poprawy pożytków pszczelich, wyd. Oddz. Pszczelnictwa ISiK w Puławach, 2000

THE TEACHER/S CONDUCTING THE CLASSES:

dr hab. inż. Agnieszka KOSEWSKA, prof. UWM a.kosewska@uwm.edu.pl

Department of Entomology, Phytopathology and Molecular Diagnostics

Prawocheńskiego 17, 10-720 Olsztyn, POLAND