

Course name:**SOCIAL INSECTS ECOLOGY**

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| ECTS | 3 |
| Course status | complementary |
| Course final assesement/evaluation of outcomes | exam |
| Prerequisites | General knowledge about entomology |

Main field of study: Biology**APPLIED BIOLOGY**

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| Profile of study | General-academic |
| The code of studies (education level) | SI/SM (master) |
| Semester of studies | winter |
| Language of instruction | English |

Course offered by:

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| Name of faculty offering the course | Faculty of Animal Science |
| Name of department offering the course | Department of Department of Zoology and Animal Welfare |
| Course coordinator | Adam Tofilski |

Learning outcomes of the course:

| Symbol of outcome | Description of learning outcome | Reference to | |
|-------------------|---------------------------------|------------------------------|-------------|
| | | main field of study outcomes | discipline# |

KNOWLEDGE – student knows and/or understands:

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|--------|---|---------------------------------------|--------|
| SIE_W1 | The student defines social and solitary insects. | BIOS1_W07 | RZ, PB |
| SIE_W2 | Describes biology of bees, ants and wasps. | BIOS1_W07, BIOS1_W09, BIOS2_W16 | RZ, PB |
| SIE_W3 | Presents examples of social insects communication. | BIOS1_W07, BIOS2_W14 | RZ, PB |
| SIE_W4 | Describes beneficial role of social insects in agriculture. | BIOS1_W14, BIOS2_W14 | RZ, PB |

SKILLS – student is able to:

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| SIE_U1 | The student knows how to behave in order to avoid stinging by bees. | BIOS2_U18 | RZ, PB |
| SIE_U2 | The student analyses data in order to understand behaviour of bees. | BIOS2_U10 | RZ, PB |
| SIE_U3 | The student is able to plan pollination of crops. | BIOS2_U10 | RZ, PB |
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SOCIAL COMPETENCE- student is ready to:

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| SIE_K1 | The student is capable of formulating unbiased opinions on the use of different species for pollination of crops. | BIOS2_K06 | RZ, PB |
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Teaching contents:

Lectures **15** **hours**

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| Topics of the lectures | Biology of social bees (2 hrs) Biology of social wasps (2 hrs) Biology of ants (2 hrs) Caste polyethism (2 hrs) Age polyethism (2 hrs) Communication in social insects (3 hrs) Importance of social insects in agriculture (2 hrs) |
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| Accomplished learning outcomes | <i>SIE_W1, SIE_W2, SIE_W3, SIE_W4, SIE_K1</i> |
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| Verification methods, rules and criteria of outcome assessment | <i>multiple-choice test (participation in the final assesement - 80 %)</i> |
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Classes **15** **hours**

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| Topics of the classes | Identification of bees (2 hrs) Identification of wasps (2 hrs) Identification of honey bee subspecies (2 hrs) Decoding of honey bee waggle dance (2 hrs) Basic beekeeping (7 hrs) |
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| Accomplished learning outcomes | <i>SIE_U1, SIE_U2, SIE_U3, SIE_K1</i> |
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| Verification methods, rules and criteria of outcome assessment | <i>reports from classes (participation in the final assesement - 20 %)</i> |
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Seminars **0** **hours**

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| Topics of the seminars | |
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| Accomplished learning outcomes | <i>symbol of learning outcomes of the seminars</i> |
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| Verification methods, rules and criteria of outcome assessment | <i>together with participation in the final assesement (in %)</i> |
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References:

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|-------|--|
| Basic | <i>Wilson, E. (1971) The insect societies. Belknap, Cambridge, MA.</i> |
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|---------------|---|
| Supplementary | <i>Hölldobler, B., Wilson, E. O. (2009). The superorganism: the beauty, elegance, and strangeness of insect societies. WW Norton & Company.</i> |
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Structure of learning outcomes:

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|----------------|-----|--------|
| Discipline: RZ | 1,5 | ECTS** |
| Discipline: PB | 1,5 | ECTS** |

Structure of student activities:

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|-------------------------------|----|-------|-----|--------|
| Contact hours | 32 | hours | 1,3 | ECTS** |
| including: | | | | |
| lectures | 15 | hours | | |
| classes and seminars | 15 | hours | | |
| consultations | 1 | hours | | |
| participation in research | 0 | hours | | |
| mandatory traineeships | 0 | hours | | |
| participation in examinations | 1 | hours | | |
| e-learning | 0 | hours | 0 | ECTS** |
| student own work | 42 | hours | 1,7 | ECTS** |

Syllabus valid from the academic year 2021/2022

*** where 10 hours of classes = 1 ECTS (in case of 15 h → 2 ECTS)**

** stated with an accuracy to 0.1 ECTS, where 1 ECTS = 25 - 30 hours of classes

academic discipline code: RZ - animal science and fishery, PB - biological sciences, etc.