



Module syllabus: Ecology and behaviour of bats

1. Overall information

Module coordinator	dr Joanna Kohyt
Contact	joanna.kohyt@us.edu.pl ; +48 32 359 1118
ECTS	3
Method for the verification of learning outcomes	<p>The final grade for the module is weighted on the average of following student activities:</p> <ul style="list-style-type: none">- Active participation in discussion sessions, laboratories and field trips (0.3)- Reports and/or oral presentations from the realised laboratory/discussion sessions and field trip tasks (0.7) <p>To be awarded a final grade, the student must have passed each activity of the module.</p> <p>Grades: below 51% – fail (F); 52-60% – with minimum academic criteria (E); 61-65% – satisfactory (D); 66-75% – good (C); 76-85% – very good (B), ≥ 85% – excellent (A)</p>

2. Description of student activity and work

Lecture/discussion sessions	
Responsible instructor	dr Joanna Kohyt
Content	<p>The main objective of this module is to provide students with an understanding of the biology, ecology and behaviour of bats, the methods that are used in field surveys and with the software that is used to analyse the sound data, identify the threats and to find effective methods to protect bats.</p> <p>Lectures/discussion sessions comprise the theoretical background of the biology, ecology and behaviour of bats.</p> <p>Lecture/discussion session content: Evolution and diversity of bats, morphology, active flight, echolocation and spatial orientation, torpor and hibernation, reproduction and development, communication and information transfer, roost ecology, feeding ecology, migration and navigation, interactions between bats and other organisms, conservation of bats.</p>
Number of didactic hours (contact hours)	15
Literature	<p>Altringham J. 1999 Bats: Biology and Behaviour. Oxford University Press, Oxford.</p> <p>Dietz C., Helversen O. Nill D. 2009. Bats of Britain, Europe and Northwest Africa. A&C Black, London.</p> <p>Research papers from scientific journals, both supplied by the instructor and those found in the journal collection database by students.</p>





Field classes	
Responsible instructors	dr Joanna Kohyt
Field trips and laboratory projects	Three field trips are designed to allow students to determine the species/groups of bat species using selected field methods. The survey areas will be selected in order to present the selectivity in the use of natural (e.g. rivers, forests, edge habitats) environments and the use of the urban space by bats. Data that is collected during the trips combined with the supplementary data and research papers provided by instructor will be used to learn how to create surveys, analyse data and present the results of bat studies in order to answer the research questions or conservation problems.
Methodology of field/laboratory classes	Work will be performed in small groups under the supervision of the instructor and will include: <ul style="list-style-type: none">- discriminating bat species/groups in the field and by using bat sound analysis software- analysing and interpreting the data that is collected or provided- preparing reports and/or presentations of the results of the work that is performed in small groups under the supervision of the instructor.
Number of didactic hours (contact hours)	30
Literature	Dietz Ch., von Helversen O. 2004. Illustrated identification key to the bats of Europe. Electronic publication. Russ J. 2012. British Bat Calls: A Guide to Species Identification. Pelagic Publishing. Exeter. Research papers from scientific journals, both supplied by the instructor and found by student in the journal collection database.

3. Forms of verification

Continuous evaluation of knowledge, activity and practical skills	
Grades	Grades are awarded on a scale of A-F, where A is the best and F is a fail. <u>An excellent performance (A)</u> – the student actively participates in the laboratories, demonstrates an excellent understanding of the problems being discussed, is engaged and creative in solving the problems being analysed. <u>A good performance (C)</u> – the student actively participates in the laboratories, demonstrates a good understanding of the problems being discussed, is engaged and creative in solving the problems being analysed. <u>A satisfactory performance (E)</u> – the student participates in the laboratories with some engagement, demonstrates a proper understanding of the problems being discussed, is satisfactorily engaged and sufficiently creative in solving the problems being analysed. <u>A performance that does not meet the minimum academic criteria (F)</u> – the student does not participate in some laboratories, does not demonstrate a proper understanding of the problems being discussed, is not engaged and creative in solving the problems being analysed.





Reports from field classes	
Evaluation	<p>Evaluation is comprised of the judgment and knowledge related to tasks that are solved, engagement in the realisation, quality of the presentation of the final results, use of reference materials.</p> <p>Grades for final projects are awarded on a scale of A-F, where A is the best and F is a fail.</p> <p>An excellent report (A) – without any essential errors</p> <p>Fail (F) – no project submitted</p> <p>Excellent (A) – the student presents a fluent knowledge of the topics discussed during the course, makes minimal errors that do not affect the quality of the presentation.</p> <p>Good (C) – the student presents a good knowledge of the topics discussed during the course, makes rare but subtle errors.</p> <p>Satisfactory (E) – the student exhibits a satisfactory knowledge of the topics discussed during the course, but with a poor understanding of some of the problems discussed and makes subtle errors.</p> <p>Fail (F) – the student does not present a satisfactory knowledge of the topics discussed during the course and makes many substantial errors, which disqualify their presentation.</p>

