BIOL4303 Animal Behaviour (6 credits)		Academic Year	1st semester
Offering Department	Biological Sciences	Quota	30
Course Co-ordinator	Dr L Karczmarski, Biological Sciences *(leszek@hku.hk)*		
Teachers Involved	Dr L Karczmarski, Biological Sciences *(100%)*		
Course Objectives	This course teaches students the ways and means of exploring and understanding animal behaviour; it provides an introduction to the field of science that investigates everything animals do, including the underlying mechanisms and functions of specific behaviours; the ways in which animals interact with each other, with their physical environment and other organisms; how animals find and defend resources, avoid predators, choose mates, reproduce, and care for their young; how complex animal societies are formed and how behaviour of an individual affects the structure of a population.		
Course Contents & Topics	This course will introduce students to scientific reasoning and conceptual basis of an understanding of animal behaviour and behavioural ecology. What causes specific behaviour and what are the underlying mechanisms? How does behaviour develop within the individual's lifetime and what functions does it serve? For example; why are some species monogamous while others are polygamous? What makes one organism the hunter and another the hunted? Several animal species, including humans, tend to live in groups; social life is among the most complex and effective survival strategy. However, how could, for instance, the birth of sterile castes, like in bees, be explained through an evolving mechanism which emphasizes the reproductive success of as many individuals as possible? Why, among animals living in small groups like squirrels, would an individual risk its own life to save the rest of the group? In this course, based upon ecological and evolutionary principles, students will learn to think within the paradigm of behavioural ecology and understand the causes, functions, development, and evolution of behaviour. We will discuss several classical studies that form the foundation of this field, as well as more recent research that represents the current concepts which have led to modern understanding of animal behaviour. We will also illustrate the links between the recent extraordinary advances in behavioural ecology and socio-ecology with their application in animal conservation.		
Course Learning Outcomes	On successful completion of this course, students should be able to: 1. Learn to appreciate the causes, functions, development, and evolution of animal behaviour. 2. Appreciate the complexity of interactions between environmental selective pressures and animal behaviour. 3. Appreciate current theories that form basis for modern understanding of animal behaviour. 4. Learn the scientific reasoning and methodology in the field of Animal Behaviour. 5. Think analytically in terms of behavioural ecology, animal socio-behavioural complexity, and how the understanding of species' behaviour contributes to its conservation.		

Pre-requisites (and Co-requisites and Impermissible combination)	Pass in BIOL2306 Ecology and evolution; and pass in one of the following courses: BIOL3301 Marine biology or BIOL3313 Freshwater ecology or BIOL3319 Terrestrial ecology or BIOL3320 The biology of marine mammals or ENVS3003 Demographic principles in ecology and evolution	
Course Grade	A+ to F	
Grade Descriptors	A	Evidence of a thorough grasp of the subject in a broader comparative perspective as demonstrated by background reading and excellent use of named examples and case studies. Evidence of independent critical thought with excellent use of a broad range of fundamental concepts to draw insightful and logical conclusions. Show eagerness to learn, great abilities of independent work, effective presentation skills with excellent analytical argumentation. Excellent or outstanding work relative to what is required at degree level.
	B	Evidence of a good grasp of the subject as demonstrated by some background reading and appropriate use of named examples and some case studies. Evidence of good critical thought, although not necessarily original. Good and very good (but not outstanding) abilities of independent work, effective presentation skills with good analytical and logical argumentation. Good general command of acquired knowledge to draw meaningful and logical conclusions. Work more than sufficient for what is required at degree level.
	C	Demonstrate an adequate, but not coherent and incomplete grasp of the subject, with limited background reading and limited use of named examples and case studies. Some abilities of logical critical thinking, but not insightful and/or independent; only partial abilities to use acquired knowledge and work independently to draw meaningful conclusions. Fair presentation skills, with mostly correct argumentation, but limited (or no) abilities to integrate broader concepts. Work sufficient for what is required for degree level.
	D	Demonstrate some grasp of the subject, but partial and limited to the most basic concepts, examples, and limited (or none) case studies. Insufficient evidence of background reading, limited abilities of critical independent thinking, and not particularly effective presentation skills with generally weak logical argumentation and restricted ability of drawing appropriate conclusions. Work barely meets what is required at degree level.
	Fail	No evidence of basic minimum knowledge and understanding of the subject. No evidence of background reading and no familiarity with any relevant examples and case studies. Inadequate evidence of coherent logical thought; ineffective presentation skills with poor argumentation and no abilities to draw meaningful conclusions. Work fails to reach degree level.
Course Type	Lecture with laboratory component course	

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<tr><td>Course Teaching
& Learning Activities</td><td colspan="3"><table>
<tr><th>Activities</th><th>Details</th><th>No. of Hours</th></tr>
<tr><td>Lectures</td><td></td><td>24</td></tr>
<tr><td>Laboratory</td><td>including field trips, site visits, interactive practical/visual sessions, classroom debates</td><td>32</td></tr>
<tr><td>Project work</td><td>project work review</td><td>8</td></tr>
<tr><td>Reading / Self study</td><td></td><td>60</td></tr>
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<tr><td>Assessment Methods
and Weighting</td><td colspan="3"><table>
<tr><th>Methods</th><th>Details</th><th>Weighting in final course grade (%)</th></tr>
<tr><td>Examination</td><td></td><td>45</td></tr>
<tr><td>Assignments</td><td>active participation/continuous assessment</td><td>55</td></tr>
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<tr><td>Required/recommended reading
and online materials</td><td colspan="3">Bolhuis J.J. & Giraldeau L.A. The Behavior of Animals: Mechanisms, Function, and Evolution (Blackwell Publishing 2005)
Danchin E., Giraldeau L-A. & Cezilly F. Behavioural Ecology (Oxford University Press 2008)
Dugatkin L.A. Principles of Animal Behavior (2nd edition) (W.W. Norton & Company 2009)
Breed M.D. & Moore J. (eds). Encyclopedia of Animal Behavior (Academic Press 2010)
Davies N.B., Krebs J.R. & West S.A. An Introduction to Behavioural Ecology; 4 edition (Wiley-Blackwell 2012)</td></tr>
<tr><td>Course Website</td><td colspan="3">http://www.biosch.hku.hk/ecology/lsc</td></tr>
<tr><td>Additional Course Information</td><td colspan="3">This course will be offered subject to a minimum enrolment number and availability of teachers.</td></tr>
<tr><td>For Reference</td><td colspan="3">Course equivalent to BIOL2625 (3-year curriculum)</td></tr>
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