Module Descriptor

Title	Pest Management		
Session	2025/26	**Status**	Published
Code	BIOL10015	**SCQF Level**	10
Credit Points	20	**ECTS (European Credit Transfer Scheme)**	10
School	**Health and Life Sciences**		
Module Co-ordinator	Richard Thacker		

Summary of Module

The module begins with a consideration of pest species ecological characteristics, particularly in relation to the r-K continuum and in relation to the synoptic model of population growth. A review of the damage caused by both vertebrate and invertebrate pests is presented along with the methods that are used to measure and assess pest species damage. The economics of pest management strategies are described particularly in relation to the use of economic thresholds for decision-making purposes. The process of pest management for both vertebrates and invertebrates is then described from a systems perspective. Vertebrate pests considered comprise deer, foxes, moles, mice, rabbits and rats in both urban and rural environments. The importance of many vertebrates as vectors of pathogenic species is discussed. Invertebrate pests considered comprise pests of the major global agricultural ecosystems, i.e. cereals, cotton orchards and rice. Special mention is also given to pest control in enclosed environments like greenhouses. As part of the above, the module describes the different approaches that can be taken to pest control, i.e. chemical, biological, and cultural. During the module students will construct a computer-based economic model of pest population development for decision-making purposes. The module is taught using a blend of lectures and computer laboratories.

This module will work to develop a number of the key “I am UWS” Graduate Attributes to make those who complete the module (e.g.) Universal Work Ready Successful. these will include students who complete the module being; Analytical, Inquiring, Digitally literate, Autonomous, Problem-solver, Research-minded, effective communicator, Collaborative, Resilient and Driven.

Module Delivery Method	On-Campus[1] ☒	Hybrid[2] ☐	Online[3] ☐	Work -Based Learning[4] ☐
Campuses for Module Delivery	☐ Ayr ☐ Dumfries	☒ Lanarkshire ☐ London ☐ Paisley	☐ Online / Distance Learning ☐ Other (specify)	

Terms for Module Delivery	Term 1	☒	Term 2	☐	Term 3	☐
Long-thin Delivery over more than one Term	Term 1 – Term 2	☐	Term 2 – Term 3	☐	Term 3 – Term 1	☐

Learning Outcomes	
L1	Describe the origins and background associated with pest management theory.
L2	Describe in detail the ecological characteristics and problems caused by world's major vertebrate and invertebrate pests.
L3	Describe the range of options that are available for ameliorating the inimical effects of most common pest species.
L4	Construct a computer-based mathematical model of pest population development that can be used for decision-making purposes.
L5	Describe Pest Management in operation in cotton, rice and orchard ecosystems.

Employability Skills and Personal Development Planning (PDP) Skills	
SCQF Headings	**During completion of this module, there will be an opportunity to achieve core skills in:**
Knowledge and Understanding (K and U)	**SCQF 10** Understanding the core theories and principles associated with the pest management process for both vertebrates and invertebrates
Practice: Applied Knowledge and Understanding	**SCQF 10** The ability to use computer-based software to develop models of pest population development The ability to identify and describe pest species damage and the steps that should be taken to minimize against such damage
Generic Cognitive skills	**SCQF 10**

[1] Where contact hours are synchronous/ live and take place fully on campus. Campus-based learning is focused on providing an interactive learning experience supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus contact hours will be clearly articulated to students.

[2] The module includes a combination of synchronous/ live on-campus and online learning events. These will be supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus and online contact hours will be clearly articulated to students.

[3] Where all learning is solely delivered by web-based or internet-based technologies and the participants can engage in all learning activities through these means. All required contact hours will be clearly articulated to students.

[4] Learning activities where the main location for the learning experience is in the workplace. All required contact hours, whether online or on campus, will be clearly articulated to students

	Undertake critical analysis of the problems caused by pest species and offer solutions to such problems
Communication, ICT and Numeracy Skills	**SCQF 10** Use of software for data analysis and presentation Interpret graphical data particularly in relation to changes in pest density and make informed decisions concerning dealing with pests
Autonomy, Accountability and Working with Others	**SCQF 10** Understand some of the ethical and professional issue associated with the process of pest management Work with others in practical computer laboratories

Prerequisites	**Module Code** BIOL09013	**Module Title** Entomology & Parasitology
	Other	
Co-requisites	**Module Code**	**Module Title**

Learning and Teaching	
In line with current learning and teaching principles, a 20-credit module includes 200 learning hours, normally including a minimum of 36 contact hours and maximum of 48 contact hours. During completion of this module, the learning activities undertaken to achieve the module learning outcomes will include formal lectures, structured tutorials, laboratory classes/simulations and independent study. VLE-based support materials will be available to support the module.	
Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	**Student Learning Hours** (Note: Learning hours include both contact hours and hours spent on other learning activities)
Lecture / Core Content Delivery	24
Laboratory / Practical Demonstration / Workshop	24
Independent Study	152
n/a	
n/a	
n/a	
TOTAL	200

Indicative Resources
The following materials form essential underpinning for the module content and ultimately for the learning outcomes: Recent research articles to support delivery will be made available on our VLE.

(N.B. Although reading lists should include current publications, students are advised (particularly for material marked with an asterisk*) to wait until the start of session for confirmation of the most up-to-date material)

Attendance and Engagement Requirements
In line with the Student Attendance and Engagement Procedure, Students are academically engaged if they are regularly attending and participating in timetabled on-campus and online teaching sessions, asynchronous online learning activities, course-related learning resources, and complete assessments and submit these on time. **For the purposes of this module, academic engagement equates to the following:** Attendance on-campus at all classes.

Equality and Diversity
The University's Equality, Diversity and Human Rights Procedure can be accessed at the following link: UWS Equality, Diversity and Human Rights Code. In line with current legislation (Equality Act, 2010) and the UWS Equality, Diversity, and Human Rights Code, our modules are accessible and inclusive, with reasonable adjustment for different needs where appropriate. Module materials comply with University guidance on inclusive learning and teaching, and specialist assistive equipment, support provision and adjustment to assessment practice will be made in accordance with UWS policy and regulations. Where modules require practical and/or laboratory based learning or assessment required to meet accrediting body requirements the University will make reasonable adjustment such as adjustable height benches or assistance of a 'buddy' or helper.
(N.B. Every effort will be made by the University to accommodate any equality and diversity issues brought to the attention of the School)

Supplemental Information

Divisional Programme Board	**Biological Sciences Health**
Overall Assessment Results	☐ **Pass / Fail** ☒ **Graded**
Module Eligible for Compensation	☐ **Yes** ☒ **No** **If this module is eligible for compensation, there may be cases where compensation is not permitted due to programme accreditation requirements. Please check the associated programme specification for details.**
School Assessment Board	Biology
Moderator	Mhairi Alexander
External Examiner	J Spicer
Accreditation Details	
Module Appears in CPD catalogue	☐ **Yes** ☒ **No**
Changes / Version Number	2.10

Assessment (also refer to Assessment Outcomes Grids below)
Assessment 1

Essays (60%)
Assessment 2
Computer Model and Quizzes (40%)
Assessment 3
(N.B. (i) Assessment Outcomes Grids for the module (one for each component) can be found below which clearly demonstrate how the learning outcomes of the module will be assessed. (ii) An indicative schedule listing approximate times within the academic calendar when assessment is likely to feature will be provided within the Student Module Handbook.)

Component 1							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Essay	☒	☒	☒	☒	☒	60	3

Component 2							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Class test (written)	☒	☒	☒	☒	☒	40	17

Component 3							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
	☐	☐	☐	☐	☐		
Combined total for all components						100%	20 hours

Change Control

What	**When**	**Who**