1. **KentVision Code and title of the module**

WCON5380 Data Analysis for Conservation Biologists

1. **Division and School/Department or partner institution which will be responsible for management of the module**

Division of Human and Social Sciences, School of Anthropology and Conservation

1. **The level of the module (Level 4, Level 5, Level 6 or Level 7)**

Level 5

1. **The number of credits and the ECTS value which the module represents**

15 credits (7.5 ECTS)

1. **Which term(s) the module is to be taught in (or other teaching pattern)**

Autumn or Spring

1. **Prerequisite and co-requisite modules**

None

1. **The courses of study to which the module contributes**

**Compulsory** to:

* BSc Wildlife Conservation

**May be offered as optional** on:

* BA Environmental Social Sciences
* BSc Human Geography

Not available as an elective module.

1. **The intended subject specific learning outcomes.  
   On successfully completing the module students will be able to:**

8.1 Discuss the theoretical normal distribution, and its application to data analysis.

8.2 Discuss null hypotheses, type I and II errors, sample strategies, and independence

8.3 Discuss and use parametric and non-parametric tests, including t-tests, Mann-Whitney, Chi-Square, Analysis of Variance (ANOVA) and Kruskal-Wallis, regressions and correlations

1. **The intended generic learning outcomes.  
   On successfully completing the module students will be able to:**

9.1 Understand, analyse and re-affirm statistical concepts, and their correct use and relevance

9.2 Understand topics including measures of central tendency, frequency distributions, the normal distribution, standard errors, and how sample parameters, and null hypotheses apply

9.3 Understand how to compare for statistical differences, and for statistical relationships

9.4 Understand the role of probability in statistics.

1. **A synopsis of the curriculum**

This module is designed to introduce and re-affirm statistical concepts, and their correct use and relevance to field biologists. This module is delivered through a combination of lectures on statistical practical tasks and exercises. Introductory topics will include measures of central tendency, frequency distributions, the normal distribution, standard errors, and how sample parameters and null hypotheses apply in real biological situations. Further topics will include one- and two-tailed tests, chi-squared test, regression analysis, and analysis of variance. The role of probability in data analysis will be considered, as will its application to biological and ecological questions. Throughout, emphasis will be placed on practical application of statistics as much as possible, and when and how they are applied. Since there is both a theoretical and practical component, students should aim to link the theory presented in lectures with the practical sessions and field trip components. The field trip will be towards the end, by which time students will have been exposed to sufficient statistical methods, and be ready to apply them. By the end of the module, students should have a knowledge of the underlying principles of statistics, be able to evaluate statistical results from a theoretical stand-point and in practise, and have a sound appreciation of the benefits and limitations of different statistical techniques and their application. This module provides students with the statistical knowledge to conduct their data analysis for their research project, and to reinforce the appreciation and knowledge of statistical methods.

1. **Reading list**

## The University is committed to ensuring that core reading materials are in accessible electronic format in line with the Kent Inclusive Practices.

## The most up to date reading list for each module can be found on the university's [reading list pages](https://kent.rl.talis.com/index.html).

* Fowler, J., Cohen, L. & Jarvis, P. (1998). Practical Statistics for Field Biology. John Wiley & Sons. Chichester, UK.
* Ruxton, G. D. & Colegrave, N. (2003). Experimental Design for the Life Sciences. Oxford University Press.

1. **Contact Hours**

Private Study: 126

Contact Hours: 24

Total: 150

1. **Assessment methods**
   1. Main assessment methods

* Statistics worksheet (40%)
* Full statistics write-up and paper (60%)

13.2 Reassessment methods

* Reassessment Instrument: 100% coursework.

1. **Map of module learning outcomes (sections 8 and 9) to learning and teaching methods and methods of assessment (section 13)**

**Module learning outcomes against learning and teaching methods:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Module learning outcome** | 8.1 | 8.2 | 8.3 | 9.1 | 9.2 | 9.3 | 9.4 |
| Lectures | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| PC practicals | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Private study | **x** | **x** | **x** | **x** | **x** | **x** | **x** |

**Module learning outcomes against assessment methods:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Module learning outcome** | 8.1 | 8.2 | 8.3 | 9.1 | 9.2 | 9.3 | 9.4 |
| Statistics worksheet | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Full statistics write-up and paper | **x** | **x** | **x** | **x** | **x** | **x** | **x** |

1. **Inclusive module design**

The Division recognises and has embedded the expectations of current equality legislation, by ensuring that the module is as accessible as possible by design. Additional alternative arrangements for students with Inclusive Learning Plans (ILPs)/declared disabilities will be made on an individual basis, in consultation with the relevant policies and support services.

The inclusive practices in the guidance (see Annex B Appendix A) have been considered in order to support all students in the following areas:

a) Accessible resources and curriculum

b) Learning, teaching and assessment methods

1. **Campus(es) or centre(s) where module will be delivered**

Canterbury

1. **Internationalisation**

The field trip component of the module includes the internationally recognised Powell-Cotton Museum where skulls collected in Africa are measured. Many of the data examples used in the module are from overseas.

**DIVISIONAL USE ONLY**

**Revision record – all revisions must be recorded in the grid and full details of the change retained in the appropriate committee records.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Date approved** | **New/Major/Minor revision** | **Start date of delivery of (revised) version** | **Section revised (if applicable)** | **Impacts PLOs (Q6 & 7 cover sheet)** |
| 05.06.17 | Minor | January 2018 | 1 | No |
| 21.07.21 | Major | July 2021 | 7,8,9,10,13,14 | yes |
| 20.01.22 | Minor | September 2022 | 5, 7 | None |
|  |  |  |  |  |