

<b>Assignment Brief</b>		
Programme(s): MSc Biodiversity Conservation	Unit Name: <b>Advanced Quantitative Methods</b>	
Unit Leader: Duncan Golicher	Assignment set by: Duncan Golicher	
<b>Date Due:</b> 13 May 2019	<b>% of unit mark</b> 100%	Length: 3000 words ( $\pm 10\%$ ) Word count excludes references & tables
Assignment is to be electronically submitted using Turnitin by 12:30pm on the due date (please allow sufficient time to upload document before the deadline)		
<b>Title of Assignment: Data Analysis</b>		
<p><b>Assignment detail:</b></p> <p>You will analyse <b>two</b> environmental data sets.</p> <p>One of the data sets will be provided to you. The second data set should be selected by you. It should be based on a specific subject area of <b>your own</b> choice. This data set may be derived from online resources, supplementary material from a piece of published work, or be the result of applying data simulation techniques shown on the course. If the data set has been analysed previously you must ensure that your own analysis addresses new research questions and/or applies a distinct set of analytical methods.</p> <p>You should analyse each data set using one, or more, of the methods taught on the unit. You will then report your findings according to the format expected in a scientific paper. The report on each of the two data sets should be around 1500 words long, excluding references and supporting material. The reports of each one of the three analyses will consist of the following sections.</p> <ol style="list-style-type: none"> <li>1. <b>Aims of the analysis.</b> This should clearly state the scientific questions that will be addressed by your data analysis. Do <b>not</b> state these questions in the form of a statistical null hypotheses to be tested. Some questions may be addressed through non inferential methods. Your analysis should aim to provide evidence that allows you to critically evaluate the uncertainty regarding the answers to each of these motivating questions. <b>10%</b></li> <li>2. <b>Analytical methods.</b> In this section you should explain and justify the choice of the analytical methods that you have applied to address the questions. You may refer to the supporting material in section five in order to keep the account concise. Briefly outline, with appropriate references, the important characteristics of the methods chosen. Explain concisely how and why these methods address your scientific questions. <b>10%</b></li> <li>3. <b>Results.</b> In this section you should present only the results of the analysis which directly address the scientific questions posed in section 1. Summarise your findings following the format of a scientific paper. Aim to use no more than four appropriate figures and/or tables. Ensure that captions contain enough information to allow the reader to interpret the figures without reference to the text. Explain all the key points shown in the figures and tables and point out their implications to the reader. <b>30%</b></li> </ol>		

4. **Discussion.** This section should consist of a concise critical appraisal of the effectiveness of the analytical methods. You do **not** need to expand your text in this report to include a discussion of the broader relevance of the findings, although you should be aware that this would form part of a more complete write up of the analysis if presented in a full paper. **10%**

5. **Supporting material.** This is an **important** element of your report in the context of evaluating the intended learning outcomes for this unit. It is not an optional appendix and it carries 40% of the marks. You **must** include **fully annotated** R code and output in the form of a document compiled from markdown and R code using RStudio. This section should include all the exploratory data visualisations and diagnostics which helped you to choose and justify the methods used. If you used simulation techniques to generate data they should be shown in this section.

Ensure that you fully document the decisions you made as a result of your data exploration. The R code should be reproducible. Figures included in this section do not need captions nor any additional formatting. They can be exploratory in nature and axis labels may use abbreviated variable names. You should include brief comments that explain how the R output has been interpreted. **40%**

### Marking criteria

Marks will be awarded for demonstrating an understanding of advanced statistical issues involved in study design, choosing an appropriate analysis and critically evaluating the assumptions made. The ability to use contemporary software and formally document the results will be evaluated with particular reference to the supporting material, presented in the format used for reproducible research.

**Confirmation that this assignment assesses the relevant ILOs:** **Yes**

**Confirmation that this assignment has been reviewed by the department assignment board:** **Yes**

**ALL Written assignments must be submitted before 12:30pm on the date due.**

**Electronic submission time will be 12:30pm on the due date following the above assignment detail, note this deadline is the time for the upload of the assignment to be completed, you are advised to begin submission AT LEAST 1 hour before.**

**For submission of hard copies (where required) the assignments submission box is on the first floor of Christchurch House, opposite C102. Assignments must be submitted here before 12.30 pm**

**Please note that as per the Standard Assessment Regulations any coursework submitted after the deadline will be capped at 0%.**

Capped assignments will be considered by the Board of Examiners and cannot be retrospectively uncapped by Academic Staff. The '72 hour' rule is discussed at the board of examiners and is not an automatic extension where you will receive 40%.

If you are unable to submit on time due to medical or other circumstances you **MUST** obtain an approved extension **PRIOR** to the submission deadline. Extension Request Forms are available from C114 or on the university website under Student Policies, Regulations and Procedures - Mitigating Circumstances

### Plagiarism

Plagiarism is the act of copying the work or ideas of others without proper acknowledgement of this work.

Plagiarism also includes self-plagiarism or duplication: the inclusion in coursework, or a dissertation, or project, of any material which is identical or substantially similar to material which has already been submitted for any other individual assessment within the University or elsewhere.

Avoiding plagiarism is best achieved through the use of proper academic referencing and minimising direct quotations (i.e. re-write others' ideas in your own words, but still provide the reference of where these ideas came from).

Further information can be found here:

<http://www.bournemouth.ac.uk/library/how-to/plagiarism.html>

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