

MARUM / GLOMAR Basic Skills and Methods Course

Statistics - An Introduction to Hypothesis Testing and Parameter Estimation (using R)

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Part 1: 19, 21, 22 January 2016

Part 2: 17 – 19 February 2016

Objectives

Part 1: The course starts with the basic rules of probability, some concepts of descriptive statistics, and a short discussion of the most common probability distributions (binomial, Poisson) and probability density functions (normal, t). The most common tests (t, Fisher-Behrens, ANOVA, Kolmogorov-Smirnov; *Zar, 2010*) are explained and applied.

Part 2: Parameter estimation (including least-squares) is introduced based in part on *Zuur et al. 2007*.

It is highly recommended that you have participated in Part 1 in order to follow Part 2!

Prerequisites

Basic knowledge of R is requested.

Target Group

Early career scientists with an interest in hypothesis testing and parameter estimation.

Please note that this course does not cover time series analyses. The latter are covered in a separate MARUM / GLOMAR course.

Please note:

*Participants who would like to **bring their own laptops** may do so but are responsible to make sure that the software is running properly by the beginning of the course.*

Instructions for downloading and setting up R are available at <http://www.r-project.org>. Please download & install RStudio as well. R and RStudio are freely available and can be used on PCs and Macs.

***During the course**, support can only be given for laptops provided by GLOMAR. The main operating system during the course will be Windows.*

Location and schedule

MARUM, University of Bremen, Leobener Str., 28359 Bremen, Germany, Room 2070

Part 1	19, 21, 22 January 2016	09.00 – 16.00
Part 2	17 – 19 February 2016	09.00 – 16.00

Literature

Zar, J.H., Biostatistical Analysis, fifth edition, Prentice Hall, 2010.

A good introduction to the frequentist approach to hypothesis testing including data sets and detailed explanations of test procedures; no computer codes provided.

Zuur, A.F., E.N. Ieno, and G.M. Smith, Analysing Ecological Data, Springer, New York, 2007. [Data & R code available: <http://www.highstat.com>]

Registration

To register for this course, please fill in the [registration form](#).

Please note that your registration will be binding.

The registration deadline for this course is **15 December 2015**.

Any enquiries regarding the course should be addressed to glomar-courses@marum.de.