

## Basic Skills and Methods Course

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

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**Part 1:** 13 – 15 June 2018

**Part 2:** 11 – 13 July 2018

#### 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!***

Please note that this course does not cover time series analyses. The latter are covered in separate courses.

#### Prerequisites

Basic knowledge of R is requested.

#### Target Group

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

#### Laptops and Software

*Laptops will be provided by GLOMAR. People who would like to bring their own laptops may do so but are expected to make sure that the software is running properly by the beginning of the course. During the course, support can only be given for laptops provided by GLOMAR.*

*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.*

### Location and schedule

MARUM main building, room 2070, Leobener Strasse 8, 28359 Bremen

<b>Part 1</b>	13 – 15 June 2018	09.00 – 16.00
<b>Part 2</b>	11 – 13 July 2018	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 visit the [course website](#). You can register for both parts of the course or for either of the parts.

*Please note that your registration will be binding.*

The registration deadline for this course is **5 June 2018**.

Any enquiries regarding the course should be addressed to [early-career@marum.de](mailto:early-career@marum.de) or [info.polmar@awi.de](mailto:info.polmar@awi.de).