



UMC Utrecht  
Julius Center

# Introductory Biostatistics for Researchers 2020

10-days introductory course in biostatistics

## Introduction

This course provides an introduction in statistical methodology and discusses a number of statistical techniques for practical data analysis. Statistical fundamentals are reviewed and expanded upon with multi variable regression analysis of Variance (ANOVA). Concrete examples and case studies are used to apply the theory to practical situations.

## Number of participants

The maximum number of participants for each course is 20, the minimum number is 12. At least one month before the start of the course, you will receive an invitation letter. If the course of your choice is full, you will be placed on a waiting list.

## Programme

In general, the daily schedule of our course includes morning lectures from 09.30 to 12.30 h, followed by computer sessions in the afternoon from 13.30 to 17.00 h. Examples from medical and biological research will be used in the exercises. Datasets will be analyzed on computers using the statistical software packages R and SPSS.

## Language

All courses will be taught in English.

## Course fee

The fee for the “Introductory Biostatistics for Researchers” course depends on your affiliation

<b>Academic</b> (e.g. AiO/OiO), post-doc, excellent trace students, researchers)	€ 1400,-
Course fee for PhD –Students UMCU, UU-Beta Sciences and UU-Veterinary Sciences if registered with UU Graduate School of Life Sciences. You may cancel your application free of charge up to 4 weeks before the start of the course. If you cancel your application within 4 weeks before the start or do not meet the attendance requirements of the course you(r dept./research group will be charged with a no-show fee ( € 700 for this course)	Free
<b>Non-profit organizations</b> (e.g. hospitals, TNO, NIHES)	€ 1550,-
<b>Profit organizations</b> (e.g. companies)	€ 1900,-

## Registration

To register for the course, please fill in the registration form and send it to [secretariaatbiostatistiek@umcutrecht.nl](mailto:secretariaatbiostatistiek@umcutrecht.nl). We will confirm your registration by e-mail as soon as we have received your registration form.

## Cancellation (other than GSLS)

For each course, the following cancellations policy applies:

- Within for weeks of the start of the course: 50% of the course fee will be charged
- Within one week of the start of a course or during a course: 100% of the course fee will be charged
- In all other cases: € 50,- administration costs will be charged

## Number of Credits

4,5 EC

## Certificate

After active participation during the whole course (morning and afternoon sessions) participants will receive a certificate.

## More information

For more information, please contact Bert Agterhuis [secretariaatbiostatistiek@umcutrecht.nl](mailto:secretariaatbiostatistiek@umcutrecht.nl)

## Prerequisite knowledge

Although active statistical knowledge is not a prerequisite, we assume some basic knowledge on statistics and mathematics acquired through, for example, courses in biostatistics in the bachelor programme or self study.

The basic knowledge we assume are:

- the concepts of population and sample
- histogram, boxplot, frequency table, scatterplot
- mean, median
- variance, standard deviation, range, interquartile range, standard error of the mean
- probability, probability distributions (especially the normal distribution)

## Preknowledge selftest

Course participants will receive a preknowledge selftest one month in advance.

If you want to refresh your basic knowledge we recommend one of the following sources of information. The reference books can also be used during the course and remain useful long after you have completed the course.

*You are not obliged to use any of these books during the course.*

- Statistical books with medical examples
  - W.W. Daniel, *Biostatistics: Basic Concepts and Methodology for the Health Sciences*, International student version, 9th Edition. John Wiley & Sons, 2010.

- P. Armitage, G. Berry and J.N.S. Matthews, *Statistical Methods in Medical Research*, 4<sup>th</sup> edition. Wiley-Blackwell, 2001.

Statistical books with biological examples:

- M.C. Whitlock and D. Schluter. *The Analysis of Biological Data*. Roberts and Company Publishers, 2009.
- J.H. Zar, *Biostatistical Analysis*, 5th Edition. Pearson Education International, 2010.
- E-learning
  - The software COSO (ComputerOndersteund StatistiekOnderwijs) consists of a glossary, knowledge basis and exercises. It requires the (free) software authorware to run. The language is Dutch.  
<http://www.bio.uu.nl/~cpio/coso/>  
 Module A and B
  - A very advanced online textbook is Online Statbook. There is a choice to have the contents as main text or as multimedia (sound with slides).  
<http://www.onlinestatbook.com>  
 Module I, II, III, V
  - CAST (Computer-Assisted Statistics Textbooks) consists of a collection of electronic textbooks (e-books). CAST is highly interactive. The approach is data-focused with many data sets and has many exercises.  
[http://cast.massey.ac.nz/collection\\_public.html](http://cast.massey.ac.nz/collection_public.html)  
 e-book:           Module 1, 2  
 exercises        Module 1
  - A more detailed overview of statistical hyperlinks (books, applets, software et cetera) on the internet will also be given in the course workbook.

Brief manuals of R and SPSS are included in the course workbook. For more detailed manuals we recommend one of the following books

- SPSS manual
  - A. de Vocht, *Basishandboek SPSS 16*, Bijleveld, 2008
  - A. Field, *Discovering Statistics Using SPSS*, 3<sup>rd</sup> edition. SAGE Publications Ltd, 2009.
  - SPSS' own very extensive help function
- R manual
  - P. Dalgaard, *Introductory Statistics with R*, 2<sup>nd</sup> edition, Springer, 2008
  - M.J. Crawley, *Statistics: an introduction using R*, Wiley, 2007.

## Registration Form Introductory Biostatistics for Researchers 2020

Title:.....Initials:.....Surname.....  
First name.....Gender.....  
UMC Division:.....  
Vakgroep/Department:.....  
Company/Organization:.....  
Name Supervisor/Promotor:.....  
Address:.....  
Telephone:.....E-mail:.....

I am:

**Academic**

- AIO/OIO of the department of Biology, Pharmaceutical Sciences, Veterinary Sciences or UMCU at Utrecht University
- PhD-student, registered with UU Graduate School of Life Sciences (GSLs)
- Academic – others, namely:
  - AIO/OIO other department Utrecht University
  - Post-doc or researcher at Utrecht University
  - Master student or Excellent trace student at Utrecht University
  - AIO/OIO at other University
  - Post-doc or researcher at other University
  - Master student or Excellent trace student at other University
- from a **Non-profit organization** (e.g. hospitals, TNO, NIHES)
- from a **Profit organization** ( e.g. companies)

WBS code(UU, except PhD students GSLs) or Kostenplaats (UMCU) is .....  
If applicable: Purchase order/activity/Reference/Project Number.....

I would like to enroll the following 10-day course:

- 8, 10, 11, 15, 17, 18, 19, 22, 23 and 26 June
- 5, 7, 8, 9, 12, 14, 16, 19, 21 and 23 October

### Course fee

The fee for the course is € 1400,- for academic, PhD-students UMCU/UU Beta Sciences/UU Veterinary Sciences free (if registered with Graduate School of Life Sciences (GSLs)), € 1550,- for non-profit organizations and € 1900,- for profit organizations. All fees are exclusive BTW. Fee for canceling your application within 4 weeks before the start of the course or not meeting the course attendance requirements: € 700

### Cancellation other than GSLs

For each course, if cancelled within four weeks of the start of a course, 50% of the fee will be charged; if cancelled within one week of the start of a course or during a course: 100% will be charged. In all other cases: € 50,- (excl. BTW) administration costs will be charged.

### Certificate

After active participation during the entire course (morning and afternoon sessions) the participant will receive a certificate.

Date: ..... Signature applicant .....

Signature Supervisor / Promotor.....

Please send this form to the Secretariate Biostatistics, Julius Center, Huispost Str 6.131., P.O.Box 85500, 3508 GA Utrecht or fax 088 7568099 or email : [secretariaatbiostatistiek@umcutrecht.nl](mailto:secretariaatbiostatistiek@umcutrecht.nl)



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3508 GA Utrecht

<https://juliuscentrum.umcutrecht.nl/nl-NL/over-julius-centrum/agenda/Introductory-Biostatistics-for-Researchers>