Module Description 31-M-ASM2 Advanced Statistical Methods II

Faculty of Business Administration and Economics

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This module guide reflects the current state and is subject to change. Up-to-date information and the latest version of this document can be found online via the page

https://ekvv.uni-bielefeld.de/sinfo/publ/modul/108246963

The current and valid provisions in the module guide are binding and further specify the subject-related regulations (German "FsB") published in the Official Announcements of Bielefeld University.

Non-official translation of the module descriptions. Only the German version is legally binding.

31-M-ASM2 Advanced Statistical Methods II

Faculty

Faculty of Business Administration and Economics

Person responsible for module

Prof. Dr. Roland Langrock

Regular cycle (beginning)

Every summer semester

Credit points

8 Credit points

Competencies

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Students acquire advanced skills of theory and application of statistical methods in a range of application areas.

The goal of this module is to acquire competences for the specification, estimation and simulation of empirically validated models. The focus of quantitative methods in economics lies on the provision and analysis of data based on an underlying economical research question, where typically the numerical application of methods is in the center of attention. Students learn to use statistical and econometrical models as a method to extract information from the growing amount of data. Hereby a special emphasis is given to acquire competences in the usage of generally applicable modeling paradigms and methods in order to allow for a widespread application to a large number of application areas.

Moreover students can include courses of other faculties (e.g. Fakultät für Mathematik oder Physik) of the Bielefeld university into this module which allows them to acquire a high level of interdiscplinary competences including the competence to work in an interdisciplinary context. Thus student develop beside statistical competences also social and communication skills.

Content of teaching

In this module students acquire advanced competences in the area of statistical modeling and/or in methodologically linked areas such as mathematical statistics or statistical physics. The content of this module consists in statistical or methododologically linked research questions, including structural issues, scientific tools and methods.

The courses included in this module in the area of statistics discuss data analytic and data base oriented methods and models. The courses extend material acquired in introductory courses and offer insights into the areas that also qualify for a deeper understanding of the methods.

This module contains a long list of courses, some of which are only read infrequently.

Recommended previous knowledge

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Necessary requirements

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Explanation regarding the elements of the module

Notes on course selection:
Two courses on different subject areas must be taken.

Justification of the necessity of two module (partial) examination:
Various types of competences are taught in the modules (methodological formal understanding, statistical thinking, problem-solving orientation, practical implementation of statistical analyses) and tested within the framework of suitable forms of examination (seminar paper, oral examination, written examination, project with elaboration). It is not possible to carry out such an examination as part of a single module examination, which is why the module examination is carried out as part of several partial module examinations.

Module structure: 2 bPr [1]

Courses

Title	Type	Regular cycle	Workload [5]	LP[2]
Courses in the field of statistics and/or in (a) methodologically related field(s) (l.)	project o. seminar o. lecture o. lecture with exercises	SoSe	120 h (30 + 90)	4 [Pr]
Courses in the field of statistics and/or in (a) methodologically related field(s) (l.)	project o. seminar o. lecture o. lecture with exercises	SoSe	120 h (30 + 90)	4 [Pr]

Examinations

Allocated examiner	Type	Weighting	Workload	LP[2]

Teaching staff of the course **Courses in the field of statistics and/or in (a) methodologically related field(s) (l.) (project o. seminar o. lecture o. lecture with exercises)** *30- to 60-minute (e-)written examination or* *15- to 20-minute (e-)oral examination or* *45-minute presentation or* *Seminar paper or elaboration of approx. 5 - 10 pages or* *Portfolio consisting of two to three tutorials or programming tasks (workload 10 - 15 working hours each) that are set during the course or one to two tutorials or programming tasks (workload 10 - 15 working hours each) that are set during the course and a (group) project (workload 20 - 30 working hours)*	e-Klausur o. Hausarbeit o. Klausur o. mündliche e-Prüfung o. mündliche Prüfung o. Portfolio o. Präsentation o. Projekt mit Ausarbeitung	1	-	-
Teaching staff of the course **Courses in the field of statistics and/or in (a) methodologically related field(s) (l.) (project o. seminar o. lecture o. lecture with exercises)** *30- to 60-minute (e-)written examination or* *15- to 20-minute (e-)oral examination or* *45-minute presentation or* *Seminar paper or elaboration of approx. 5 - 10 pages or* *Portfolio consisting of two to three tutorials or programming tasks (workload 10 - 15 working hours each) that are set during the course or one to two tutorials or programming tasks (workload 10 - 15 working hours each) that are set during the course and a (group) project (workload 20 - 30 working hours)*	e-Klausur o. Hausarbeit o. Klausur o. mündliche e-Prüfung o. mündliche Prüfung o. Portfolio o. Präsentation o. Projekt mit Ausarbeitung	1	-	-

Legend

1	The module structure displays the required number of study requirements and examinations.
2	LP is the short form for credit points.
3	The figures in this column are the specialist semesters in which it is recommended to start the module. Depending on the individual study schedule, entirely different courses of study are possible and advisable.
4	Explanations on mandatory option: "Obligation" means: This module is mandatory for the course of the studies; "Optional obligation" means: This module belongs to a number of modules available for selection under certain circumstances. This is more precisely regulated by the "Subject-related regulations" (see navigation).
5	Workload (contact time + self-study)
SoSe	Summer semester
WiSe	Winter semester
SL	study requirement
Pr	Examination
bPr	Number of examinations with grades
uPr	Number of examinations without grades