

Module Advanced Data Analytics

| Module Number | Study Programme TBB/TAB | Semester 6 | Offered in X WS X SS | Duration 1 Semester | Module Type Selective | Workload (h) 128 | ECTS Points 4+2 ECTS |
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| 2 | Courses Advanced Data Analytics Project | Teaching and Learning Forms Lecture Project | Contact Time (SWS) (h) | | Self-Study Time (h) | Language english | |
| 3 | <p>Learning Outcomes and Competences Once the module has been successfully completed, the students can...</p> <p>Knowledge and Understanding</p> <ul style="list-style-type: none"> • Students will have a basic understanding of advanced data analytics. • They acquire the ability to translate business problems into analytical solutions. • Understand up-to-date topics such as Big Data, Smart Data, Data Mining, etc. • Know the CRISP and the Market Research Process. • Learn the key issues of professional questionnaire design. • They know the basic theoretical background of several important uni-, bi-, and multivariate methods. <p>Use, Application and Generation of Knowledge</p> <ul style="list-style-type: none"> • Students are able to program an online questionnaire with a specific tool (e.g. Questback Unipark). • Students are able to analyze data with IBM SPSS Statistics and/ or IBM SPSS Modeler. • Students are able to apply statistical methods on data from different sources (e.g. data generated with questionnaires or data already stored in a database). • Students are able to read and interpret SPSS Outputs. • Students are able to derive data-driven recommendations for actions. <p>Communication and Cooperation</p> <ul style="list-style-type: none"> • Communicate, discuss and present data analyses in English. • Translate business problems into analytical solutions. • Discuss up-to-date topics such as Big Data, Smart Data, Data Mining, etc. <p>Scientific Self-Conception/ Professionalism</p> <ul style="list-style-type: none"> • The course wants to ensure, that students not only know the theoretical background of the various methods but also are able to apply them on real data. Therefore the course also includes a practical training for data analytics with IBM SPSS Statistics and/or IBM SPSS Modeler. | | | | | | |
| 4 | <p>Contents</p> <p>The aim of this course is to give students a basic understanding of advanced data analytics so that they are able to translate business problems into analytical solutions. They know several of the most important uni-, bi-, and multivariate methods and are able to apply them on data from different sources (e.g. data generated with questionnaires or data already stored in a database) with IBM SPSS Statistics or IBM SPSS Modeler. After this course they are able to understand and discuss up-to-date topics such as Big Data and Smart Data.</p> <p>General topics:</p> <ul style="list-style-type: none"> • Importance of advanced data analytics • Difference between market research, big data, smart data, data mining, etc. • Key issues in questionnaire design • Important use cases in practice <p>Methods in focus:</p> <ul style="list-style-type: none"> • Measures of Location, Measures of Shape, Measures of Variation • Cross tabs, Chi², Pearson and Spearman correlations • Parametric and Non Parametric tests • Linear Regression • Variance analysis • Cluster analysis • Factor Analysis | | | | | | |

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| 5 | <p>Participation Requirements</p> <p>recommended: Basics in Statistics and Maths, Interest in Data Analytics, Data Mining and quantitative Market Research</p> |
| 6 | <p>Examination Forms and Prerequisites for Awarding ECTS Points</p> <p>Written Examination of 90 Minutes and Presentation non graded</p> |
| 7 | <p>Further use of Module</p> |
| 8 | <p>Module Manager and Full-Time Lecturer</p> <p>Prof. Dr. Dorothee Brauner</p> |
| 9 | <p>Literature</p> <ul style="list-style-type: none"> • Hair, J.: Multivariate Data Analysis, 7th Edition, Pearson, 2010 • Bühl, A.: SPSS 22: Einführung in die moderne Datenanalyse (Pearson Studium - Scientific Tools) Gebundene Ausgabe – 1. Januar 2014 • Wendler, T. & Gröttrup S.: Data Mining with SPSS Modeler. Theory, Exercises and Solutions, Springer International Publishing, 2016 • Lecture Notes |
| 10 | <p>Last Updated</p> <p>04.03.2020</p> |