

## Course Descriptions None 2023-2024

| Course Title  | Statistics   |                          |                   |     |     |     |     |     |     |   |            |            |  |  |  |  |  |
|---|--|--------------------------|-------------------|-----|-----|-----|-----|-----|-----|---|------------|------------|--|--|--|--|--|
| Course Code   | EBC1044  |                          |                   |     |     |     |     |     |     |   |            |            |  |  |  |  |  |
| ECTS Credits  | 6,5  |                          |                   |     |     |     |     |     |     |   |            |            |  |  |  |  |  |
| Assessment  | Whole/Half Grades  |                          |                   |     |     |     |     |     |     |   |            |            |  |  |  |  |  |
| Period  | <table border="1"> <thead> <tr> <th>Period</th> <th>Start</th> <th>End</th> <th>Mon</th> <th>Tue</th> <th>Wed</th> <th>Thu</th> <th>Fri</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>30-10-2023</td> <td>15-12-2023</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>  | Period                   | Start             | End | Mon | Tue | Wed | Thu | Fri | 2 | 30-10-2023 | 15-12-2023 |  |  |  |  |  |
| Period  | Start  | End                      | Mon               | Tue | Wed | Thu | Fri |     |     |   |            |            |  |  |  |  |  |
| 2   | 30-10-2023   | 15-12-2023               |                   |     |     |     |     |     |     |   |            |            |  |  |  |  |  |
| Level   | Introductory   |                          |                   |     |     |     |     |     |     |   |            |            |  |  |  |  |  |
| Coordinator   | Dirk Tempelaar For more information:d.tempelaar@maastrichtuniversity.nl  |                          |                   |     |     |     |     |     |     |   |            |            |  |  |  |  |  |
| Language of instruction   | English  |                          |                   |     |     |     |     |     |     |   |            |            |  |  |  |  |  |
| Goals   | <ul style="list-style-type: none"> <li>* Understanding of main statistical concepts and methods that shape descriptive statistics, probability models, sampling and inferential statistics.</li> <li>* Apply main statistical concepts and methods that shape descriptive statistics, probability models, sampling and inferential statistics.</li> <li>* Being able to reason what statistical concepts and methods match business analytics cases.</li> <li>* Judging about the correctness of applying statistical concepts and methods in business analytics cases.</li> <li>* Reflect on the choice for methods and their application in business analytics cases.</li> </ul>   |                          |                   |     |     |     |     |     |     |   |            |            |  |  |  |  |  |
| Description   | <p>In our course, we will focus on the following topics:</p> <ul style="list-style-type: none"> <li>* Methods of data collection, and types of data.</li> <li>* Descriptive statistics: describing important characteristics of populations or samples by numerical methods as the mean, median, mode (measures of central tendency), variance and standard deviation (measures of spread) as well as by graphical methods, like histograms, bar charts or Box-and-Whiskers displays.</li> <li>* Probability theory, as an introduction to random variables.</li> <li>* Discrete random variables and the most important discrete probability distribution: the binomial distribution; continuous random variables and two continuous probability distributions: the uniform and the normal distribution.</li> <li>* Sampling theory, as the foundation of inferential statistics, or inductive reasoning.</li> <li>* The construction of confidence intervals to estimate unknown population parameters.</li> <li>* Hypothesis testing for both the proportion and means cases.</li> <li>* Regressions analysis and ANOVA: the investigation of relationships.</li> </ul> |                          |                   |     |     |     |     |     |     |   |            |            |  |  |  |  |  |
| Literature  | OpenIntro Statistics, 4th Edition, 2019, by David Diez, Çetinkaya-Rundel, Christopher D. Barr ( <a href="https://www.openintro.org/stat/textbook.php?stat_book=os">https://www.openintro.org/stat/textbook.php?stat_book=os</a> ) MyOpenMath digital learning environment ( <a href="http://www.myopenmath.com">www.myopenmath.com</a> )   |                          |                   |     |     |     |     |     |     |   |            |            |  |  |  |  |  |
| Prerequisites   | <p>This course is in transition.</p> <p>The following rule applies to bachelor Business Analytics students who started the programme prior to academic year 2022/23.<br/> <b>TRANSITIONAL REGULATION (EBC1044):</b><br/>           Students who started their Bachelor's study programme Business Analytics in or prior to September 2021 and did not successfully complete Mathematical Analysis (EBC1043) and/or Statistics (EBC1044) before September 2023 have an exam only option to pass the course(s) in academic year 2023-2024.</p> <p>See the Transitional Regulations section in the Bachelor Education and Examination Regulations for more information.</p>   |                          |                   |     |     |     |     |     |     |   |            |            |  |  |  |  |  |
| Keywords  |  |                          |                   |     |     |     |     |     |     |   |            |            |  |  |  |  |  |
| Teaching methods  | PBL / Assignment / Papers  |                          |                   |     |     |     |     |     |     |   |            |            |  |  |  |  |  |
| Assessment methods  | Final Paper / Assignment / Take home exam  |                          |                   |     |     |     |     |     |     |   |            |            |  |  |  |  |  |
| Evaluation in previous academic year                            | For the complete evaluation of this course please click <a href="http://iwio-sbe.maastrichtuniversity.nl/rapporten.asp?referrer=codeUM">http://iwio-sbe.maastrichtuniversity.nl/rapporten.asp?referrer=codeUM</a>  |                          |                   |     |     |     |     |     |     |   |            |            |  |  |  |  |  |
| This course belongs to the following programme / specialisation | <table border="1"> <tr> <td>Transitional Regulations</td> <td>See prerequisites</td> </tr> </table>  | Transitional Regulations | See prerequisites |     |     |     |     |     |     |   |            |            |  |  |  |  |  |
| Transitional Regulations  | See prerequisites  |                          |                   |     |     |     |     |     |     |   |            |            |  |  |  |  |  |