

## Course Descriptions NonDegree 2019-2020

| Course Title  | Data Analysis Skills   |  |                            |                     |                        |                        |               |     |     |   |           |           |   |  |  |  |  |
|---|--|--|----------------------------|---------------------|------------------------|------------------------|---------------|-----|-----|---|-----------|-----------|---|--|--|--|--|
| Course Code   | EBS4001  |  |                            |                     |                        |                        |               |     |     |   |           |           |   |  |  |  |  |
| ECTS Credits  | 4,0  |  |                            |                     |                        |                        |               |     |     |   |           |           |   |  |  |  |  |
| Assessment  | None   |  |                            |                     |                        |                        |               |     |     |   |           |           |   |  |  |  |  |
| 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>3</td> <td>13-1-2020</td> <td>24-1-2020</td> <td>C</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>   | Period                                       | Start                      | End                 | Mon                    | Tue                    | Wed           | Thu | Fri | 3 | 13-1-2020 | 24-1-2020 | C |  |  |  |  |
| Period  | Start  | End  | Mon                        | Tue                 | Wed                    | Thu                    | Fri           |     |     |   |           |           |   |  |  |  |  |
| 3   | 13-1-2020  | 24-1-2020                                    | C                          |                     |                        |                        |               |     |     |   |           |           |   |  |  |  |  |
| Level   | Advanced   |  |                            |                     |                        |                        |               |     |     |   |           |           |   |  |  |  |  |
| Coordinator   | Bram Foubert For more information:b.foubert@maastrichtuniversity.nl  |  |                            |                     |                        |                        |               |     |     |   |           |           |   |  |  |  |  |
| Language of instruction   | English  |  |                            |                     |                        |                        |               |     |     |   |           |           |   |  |  |  |  |
| Goals   | <p>In terms of the so-called Assurance of Learning standards, this course pursues the following learning objectives:</p> <ul style="list-style-type: none"> <li>* Knowledge acquisition: students will acquire knowledge of statistical methods and econometric models that are relevant when dealing with limited or nonmetric dependent variables.</li> <li>* Knowledge application and judgement: in four assignments, students will learn to use and extend their knowledge on the basis of realistic cases and datasets.</li> <li>* Research skills: the acquired knowledge involves (the application of) econometric techniques and thus directly contributes to students' research skills.</li> <li>* Communication and professional attitude: to realize the above learning objectives, interaction, feedback, and teamwork will be key. As a result, students will also sharpen their communication skills and improve their professional attitude.</li> </ul>  |  |                            |                     |                        |                        |               |     |     |   |           |           |   |  |  |  |  |
| Description   | <p>Dependent variables rarely cover the full line of real numbers. Although the assumption of an unconstrained continuous dependent variable may be relatively harmless in quite some cases, many situations require a different approach. For example, when a consumer purchases packaged goods, he or she only buys an integer, nonnegative number of units. In surveys, Likert or semantic scales not only discretize but also limit a person's true response, in that they impose minimum and maximum values. Finally, 0/1 phenomena by definition demand techniques that recognize the binary, nominal nature of the data. Ignoring the true characteristics of your data may lead to inefficient and inconsistent estimates and may generate nonsensical predictions. This skills training therefore introduces students to:</p> <ul style="list-style-type: none"> <li>* different types of limited and/or nonmetric dependent variables and the inherent dangers of ignoring the data's real nature;</li> <li>* models that take into account the peculiarities of the data; and</li> <li>* a particularly popular estimation technique that is flexible enough to estimate all studied models, namely Maximum Likelihood Estimation (MLE).</li> </ul> <p>On the basis of structured assignments with realistic data, we will conduct econometric analyses in the open-source programming environment R.</p> |  |                            |                     |                        |                        |               |     |     |   |           |           |   |  |  |  |  |
| Literature  | Selected chapters from textbooks, course slides, course book   |  |                            |                     |                        |                        |               |     |     |   |           |           |   |  |  |  |  |
| Prerequisites   | <ul style="list-style-type: none"> <li>* Experience with a statistical package like SPSS</li> <li>* First experience with R (if not, preparatory assignment will be provided)</li> <li>* Knowledge of multiple regression analysis and Ordinary Least Squares</li> <li>* Knowledge of elementary and matrix algebra (if not, preparatory assignment will be provided)</li> <li>* Knowledge of basic calculus</li> </ul>  |  |                            |                     |                        |                        |               |     |     |   |           |           |   |  |  |  |  |
| Teaching methods  | PBL / Presentation / Lecture / Assignment  |  |                            |                     |                        |                        |               |     |     |   |           |           |   |  |  |  |  |
| Assessment methods  | Attendance / Participation   |  |                            |                     |                        |                        |               |     |     |   |           |           |   |  |  |  |  |
| 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="0"> <tr> <td>Master Business Research - No specialisation</td> <td>Year 1 Compulsory Skill(s)</td> </tr> <tr> <td>SBE Exchange Master</td> <td>Master Exchange Skills</td> </tr> <tr> <td>SBE Non Degree Courses</td> <td>Master Skills</td> </tr> </table>   | Master Business Research - No specialisation | Year 1 Compulsory Skill(s) | SBE Exchange Master | Master Exchange Skills | SBE Non Degree Courses | Master Skills |     |     |   |           |           |   |  |  |  |  |
| Master Business Research - No specialisation                    | Year 1 Compulsory Skill(s)   |  |                            |                     |                        |                        |               |     |     |   |           |           |   |  |  |  |  |
| SBE Exchange Master   | Master Exchange Skills   |  |                            |                     |                        |                        |               |     |     |   |           |           |   |  |  |  |  |
| SBE Non Degree Courses  | Master Skills  |  |                            |                     |                        |                        |               |     |     |   |           |           |   |  |  |  |  |