**Data Science: Data analysis and visualisation (S31)**

**29.07.2019 – 02.08.2019**

Course Directors: (*Daniel Oberski), Maarten Cruyff*

Course Location: Minnaert building room 2.01– Leuvenlaan 4, 3584CE Utrecht.

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| **Saturday and Sunday (27 & 28 July)** | | | | |
| **Time** | | **Activity** | **Description** |  |
| *12.00 – 18.00* | | *Key pickup* | *You will find the exact key pick up location in the pre-departure information, which becomes available after you have paid the course fee.* |  |
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| **Day** | **Time** | **Activity** | **Description** | **Location** |
| **Monday** | 09:00 - 12:00 | Lecture + lab | Introduction to Data Analysis and Visualisation Grammar of Graphics | Minnaert building, room 2.01 |
| *12:00 – 13:00* | *Lunch* |  |  |
| 13:15 – 17:00 | Lecture + lab | Statistical Learning  Prediction, Training/Validation/Test paradigm | Minnaert building, room 2.01 |
| **Tuesday** | 09:00 - 12:00 | Lecture + lab | Supervised learning: Regression  Feature selection, Regularization | Minnaert building, room 2.01 |
| *12:00 - 13:00* | *Lunch* | *---* |  |
| 13:15 – 17:00 | Lecture + lab | Supervised learning: Regression  Nonlinear regression, Interactions | Minnaert building, room 2.01 |
| **Wednesday** | 09:00 - 12:00 | Lecture + lab | Supervised learning: Classification  Logistic Regression, Discriminant Analysis | Minnaert building, room 2.01 |
| *12:00 - 13:00* | *Lunch* | *---* |  |
| 13:15 - 16:30 | Lecture + lab | Supervised learning: Classification  Trees, Support Vector Machines | Minnaert building, room 2.01 |
| **Thursday** | 09:00 - 12:00 | Lecture + lab | Unsupervised learning  PCA | Minnaert building, room 2.01 |
| *12:00 - 13:00* | *Lunch* | *---* |  |
| 13:15 – 17:00 | Lecture + lab | Unsupervised learning  K-means and hierarchical clustering | Minnaert building, room 2.01 |
| **Friday** | 09:00 - 12:00 | Lab | Project work, preparing presentations | Minnaert building, room 2.01 |
| *12:00 - 13:00* | *Lunch* | *---* |  |
| 13:15 - 17:00 | Presentations | Presentations of projects by participants | Minnaert building, room 2.01 |