Course Catalogue
for the Master’s Programme in Social and Economic Data Science

Summer Semester 2021

Version: 20/04/2021
Course Advice for Students of the
Master's Programme in Social and Economic Data Science

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Email: seds.msc@uni-konstanz.de

Dates of the Summer Semester 2021

Lectures begin: Monday, 12th April 2021
Lectures end: Saturday, 24th July 2020 (Dept. of Economics: 17/07/21)

Registration period of the Department of Economics:

Exam registration period: 29th June – 5th July 2021
Examination period I: 15th July – 8th August 2021
Exam registration period: 14th September – 20th September 2021
Examination period II: 7th October – 31st October 2021

Registration periods of the Department of Politics and Public Administration:

Exam registration period I: 01st May – 16th June 2021
Exam registration period II: 11th September – 16th September 2021
Exam Registration Periods of the Department of Computer and Information Science

1st exam period: 27th April – 12th July 2021
2nd exam period (if applicable): 13th September – 27th September 2021

Exam Registration Periods of the Department of History and Sociology

Registration period (ZEuS): 1st May – 15th June 2021

Exam Registration Periods of the Department of Mathematics and Statistics

Registration: Students are able to apply via ZEuS up to seven days before the exam.

Exam Registration Periods of the Department of Psychology

Registration period: 1st of June 2021 – 30th of June 2021

Dates of the Winter Semester 2021/22

Lectures begin: Monday, 25th October 2021
Lecture-free period: 24th December 2021 – 6th January 2022
Lectures end: Saturday, 12th February 2022
1. Foundations of Data Science

Focus Area: Computer Sciences

Data Visualization: Basic Concepts, 2+2 hours (6 ECTS)  
D. Keim  
Tuesday, 10:00 – 11:30  
See: ZEuS  
Tutorial:  
Group I: Wednesday, 15:15 – 16:45  
Group II: Thursday, 13:30 – 15:00  
Group III: Thursday, 15:15 – 16:45  
See: ZEuS  

Konzepte der Informatik, 4+2 hours (6 ECTS)  
B. Pampel  
Monday, 10:00 - 11:30  
Tuesday, 10:00 – 11:30  
(recorded lectures on ILIAS)  
See: ZEuS  
Tutorials:  
Group I: Friday, 08:15 – 09:45  
Group II: Friday, 10:00 – 11:30  
Group III: Friday, 11:45 – 13:15  
See: ZEuS  

Only in combination with:  
Programmierkurs I, 2+2 hours (6 ECTS)  
J. Fuchs  
Wednesday, 11:45 - 13:15 (registration via ILIAS mandatory)  
See: ZEuS  
Tutorials:  
Group I: Wednesday, 13:30 – 15:00  
Group II: Wednesday, 15:15 – 16:45  
Group III: Wednesday, 17:00 – 18:30  
Group IV: Friday, 10:00 – 11:30  
Group V: Friday, 13:30 – 15:00  
See: ZEuS

Focus Area: Mathematics

Analysis und Lineare Algebra, 4+2 hours (9 ECTS)  
S. Kosub  
Wednesday, 10:00 - 11:30  
Thursday, 10:00 - 11:30  
See: ZEuS  
Tutorials:  
Group I: Thursday, 11:45 – 13:15  
Group II: Thursday, 13:30 – 15:00  
Group III: Thursday, 17:00 – 18:30  
Group IV: Friday, 10:00 – 11:30  
Group V: Friday, 13:30 – 15:00  
See: ZEuS
Focus Area: Social Scientific Methods

Econometrics I, 3+2 hours (8 ECTS)  
Tuesday, 17:00 - 18:30 (Q&A Tutorial)  
Thursday, 08:15 - 09:45 (Q&A Lecture)  
See: ZEuS

Tutorials:  
Group I: Monday, 11:45 – 13:15  
Group II: Tuesday, 08:15 – 09:45  
Group III: Wednesday, 10:00 – 11:30  
Group IV: Thursday, 15:15 – 16:45  
Group V: Friday, 10:00 – 11:30  
See: ZEuS

Methoden 2, 2 hours (5 ECTS)  
Monday, 13:30 – 15:00  
See: ZEuS

Focus Area: Statistics

Statistics I (Dept. of Economics), 2+2 hours (6 ECTS)  
Friday, 10:00 – 11:30  
See: ZEuS

9 Tutorials, for time and room see ZEuS

Statistik (Dept. of Sociology), 2+2 hours (7 ECTS)  
Monday, 10:00 – 11:30, See: ZEuS  
Exercise: Tuesday, 10:00 – 11:30, See: ZEuS

Tutorials:  
Group I: Wednesday, 10:00 – 11:30  
Group II: Wednesday, 13:30 – 15:00  
Group III: Wednesday, 15:15 – 16:45  
Group IV: Thursday, 10:00 – 11:30  
Group V: Friday, 10:00 – 11:30  
See: ZEuS

Statistics (Dept. of Political Science), 2+2 hours, (9 ECTS)  
Tuesday, 15:15 – 16:45  
Wednesday, 10:00 – 11:30  
See: ZEuS

2. Advanced Methods: Computer Science

Big Data Management and Analysis, 2+2 hours (6 ECTS)  
Wednesday, 08:15 – 9:45 (also subscribe on ILIAS!)  
See: ZEuS

Tutorial:  
Wednesday, 10:00 – 11:30  
See: ZEuS
Algorithmen und Datenstrukturen, 4+2 hours (9 ECTS)  
S. Storandt
Monday, 15:15 – 16:45  
Tuesday, 10:00 – 11:30  
See: ZEuS

Tutorials:  
Group I: Thursday, 13:30 – 15:00  
Group II: Friday, 10:00 – 11:30  
Group III: Friday, 11:45 – 13:15  
See: ZEuS

Only in combination with:  
Programmierkurs II, 2 hours (3 ECTS)  
S. Storandt
Tuesday, 15:15 – 16:45  
See: ZEuS

Datenbanksysteme, 4+2 hours (9 ECTS)  
M. Scholl  
Monday, 13:30 – 15:00  
Tuesday, 13:30 – 15:00  
See: ZEuS

Tutorials:  
Group I: Wednesday, 13:30 – 15:00  
Group II: Wednesday, 17:00 – 18:30  
Group III: Friday, 08:15 – 09:45  
Group IV: Friday, 11:45 – 13:15  
Group IV: Friday, 13:30 – 15:00  
See: ZEuS

Document Analysis: Computational Methods, 2 + 2 (6 ECTS)  
AG Keim
Thursday, 11:45 – 13:15  
See: ZEuS

Tutorial:  
Group I: Monday, 10:00 – 11:30  
Group II: Tuesday, 11:45 – 13:15  
Group III: Wednesday, 13:30 – 15:00  
See: ZEuS

Graph Data Management and Analysis, 2 + 2 hours (6 ECTS)  
M. Grossniklaus / T. Chondrogiannis  
Wednesday, 11:45 – 13:15 (online, flipped classroom)  
See: ZEuS

Machine-Learning with Kernels, 2 + 2 hours (6 ECTS)  
M. Rupp
Tuesday, 11:45 – 13:15  
See: ZEuS

Tutorial:  
Thursday, 15:15 – 16:45  
See: ZEuS
Image Analysis: 3D and Motion Reconstruction, 3 + 1 hours (6 ECTS) B. Goldlücke
Tuesday, 8:15 – 9:45
Friday, 8:15 – 9:45 (bi-weekly)
See: ZEuS

Tutorial:
Friday, 8:15 – 9:45 (bi-weekly)
See: ZEuS

3. Advanced Methods: Statistics

Probability Theory and Statistical Inference, 2 + 2 hours (8 ECTS) L. Grigoryeva
The lecture will be online. Videos will be provided via ILIAS.
See: ZEuS

Tutorial:
Monday, 08:15 – 09:45 (bi-weekly)
See: ZEuS

Research Design II: Statistical Modelling and Inference M. Herrmann
in Quantitative Research
Thursday, 10:00 – 11:30
See: ZEuS

Applied Time Series Analysis, 3+1 hours (8 ECTS) R. Brüggemann
Monday, 11:45 – 13:15
See: ZEuS

Tutorial: Friday, 11:45 – 13:15
See: ZEuS

Machine Learning, 3 hours (6 ECTS) L. Grigoryeva
Monday, 15:15 – 16:45
Monday, 17:00 – 18:30 (bi-weekly)
See: ZEuS

4. Programming and Scripting

Programmierkurs I, 2+2 hours (6 ECTS) J. Fuchs
Wednesday, 11:45 - 13:15 (registration via ILIAS mandatory)
See: ZEuS

Tutorials:
Group I: Wednesday, 13:30 – 15:00
Group II: Wednesday, 15:15 – 16:45
Group III: Wednesday, 17:00 – 18:30
See: ZEuS

Programmierkurs II, 2 hours (3 ECTS) S. Storanld
Tuesday, 15:15 – 16:45
See: ZEuS
5. Social Science Applications

Studying news use with computational methods, 2+2 hours (9 ECTS)  
(6 ECTS to be recognised in the module Social Science Applications,  
3 ECTS to be recognised in the module Programming and Scripting)  
Monday, 10:00 – 13:13  
See: ZEuS  
L. Merten / J. Unkel

Dept. of Politics and Public Administration:

Property Rights and Rural Development, 2 hours (7 ECTS)  
Monday, 15:15 – 16:45  
See: ZEuS  
C. Wegenast

Introduction to Computer-Based Text Analysis:  
Analysis of Political Speech in the UN Security Council, 2 hours (7ECTS)  
Friday, for individual schedule see ZEuS  
S. Eckhard

Data Management for Social Scientists, 2 hours (7 ECTS)  
Thursday, 15:15 – 16:45  
See: ZEuS  
N. Weidmann

Dept. of Computer Science:

Master’s Seminar Data Analysis and Visualization, 2 hours (3 ECTS)  
Monday, 15:15 – 16:45  
See: ZEuS  
AG Keim

Master’s Seminar Data and Information Mining, 2 hours (3 ECTS)  
Seminar theme (Summer 2021): “Ethical Implications of Machine Learning and Data Science”  
Monday, 13:30 – 15:00  
See: ZEuS  
AG Spitz

Master’s Seminar Databases and Information Systems, 2 hours (3 ECTS)  
Monday, 15:15 – 16:45  
See: ZEuS  
M. Grossniklaus

Master’s Seminar Algorithmics, 2 hours (4 ECTS)  
Monday, 8:15 – 9:45  
See: ZEuS  
S. Storandt

Applied Visual Analytics, 2 hours (6 ECTS)  
Wednesday, 17:00 – 18:30  
See: ZEuS  
AG Keim
Dept. of Psychology:

Blockseminar: Internet-based Data Collection and Analysis, (6 ECTS)  U. Reips
room tba (on campus if regulations allow)
Monday, 13th September: 11:00 – 18:00
Tuesday, 14th September: 10:00 – 22:00
Wednesday, 15th September: 10:00 – 21:00
Thursday, 16th September: 10:00 – 21:00
Friday, 17th September: 11:00 – 18:00
See: ZEuS
MSc SEDS students are allowed to take part if spots are available.
Contact: Prof. U. Reips (reips@uni-konstanz.de)

Dept. of Economics:

Econometric Projects - Economic Forecasting (6 ECTS)  R. Brüggemann
Kick-off: Wednesday, 14th April, 11:45 – 13:15
Block: Thursday, 1st July (08:00 – 18:00) – Friday, 2nd July (08:00 – 18:00)
See: ZEuS

Dept. of Linguistics:

Künstliche Intelligenz, 2 hours (6 ECTS)  A. Hautli-Janisz
Thursday, 13:30 – 15:00
See: ZEuS
## Timetable Foundations of Data Science Summer Semester 2021

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<thead>
<tr>
<th>Time</th>
<th>Monday</th>
<th>Tuesday</th>
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<td>10:00 –</td>
<td>Konzepte der Informatik (L) / Pampel</td>
<td>Konzepte der Informatik (L) / Pampel</td>
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<td>Analysis und Lineare Algebra (L) / Kosub</td>
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<td>11:30</td>
<td>Statistik (Dept. of Sociology, L) / Buis</td>
<td>Data Visualization: Basic Concepts (L) / Keim</td>
<td>Statistics (Dept. of Political Science, L) / Shikano</td>
<td>Analysis und Lineare Algebra (L) / Kosub</td>
<td>Statistics I (Dept. of Economics, L) / Brüggemann</td>
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<td>Statistics (Dept. of Political Science, L) / Shikano</td>
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<td>Econometrics I (Q&amp;A L) / Maurer</td>
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<td>08:15 – 09:45</td>
<td>• Probability Theory and Statistical Inference (T) / Grigoryeva</td>
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<td>Big Data Management and Analysis (L) / Grossniklaus</td>
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<td>• Algorithmics (S) / Storandt</td>
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<td>10:00 – 11:30</td>
<td>Study news use with computational methods (S) / Merten/Unkel</td>
<td>Algorithmen und Datenstrukturen (L) /</td>
<td>Big Data Management and Analysis (T) /</td>
<td>Research Design II: Statistical Modelling and Inference (L) / Herrmann</td>
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<td>Storandt</td>
<td>Grossniklaus</td>
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<td>11:45 – 13:15</td>
<td>• Study news use with computational methods (S) / Merten/Unkel</td>
<td>Machine-Learning with Kernels (L) / Rupp</td>
<td>Graph Data Management and Analysis (L) / Grossniklaus &amp; Chondrogiannis</td>
<td>Document Analysis (L) / AG Keim</td>
<td>Applied Time Series Analysis (T) / Brüggemann</td>
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<td>13:30 – 15:00</td>
<td>• Datenbanksysteme (L) / Scholl</td>
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<td>• Data and Information Mining (S) / Spitz</td>
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<td>15:15 – 16:45</td>
<td>• Algorithmen und Datenstrukturen (L) / Storandt</td>
<td>Programmierkurs II (L) / Storandt</td>
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<td>• Machine-Learning with Kernels (T) / Rupp</td>
<td>Data Management for Social Scientists (S) / Weidmann</td>
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<td>Machine Learning (L) / Grigoryeva</td>
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