Course Catalogue

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

Summer Semester 2019

Version: 01/04/2019
Course Advice for Students of the
Master’s Programme in Social and Economic Data Science

Alexandra Morris
Room F 264
Tel.: (07531) 88-4494
Fax: (07531) 88-5193
E-mail: Alexandra.Morris@uni-konstanz.de
Website: www.uni-konstanz.de/seds
Office Hours: Tuesday, Thursday, 10:00 – 12:00

Student Course Guidance:
Alessia Invernizzi
Email: seds.msc@uni-konstanz.de

Dates of the Summer Semester 2018

Lectures begin: Monday, 15\textsuperscript{th} April 2019
Lectures end: Saturday, 20\textsuperscript{st} July 2019

Registration period of the Department of Economics:

Exam registration period: 25\textsuperscript{th} June – 01\textsuperscript{st} July 2019
Examination period I: 11\textsuperscript{th} July – 03\textsuperscript{rd} August 2019

Exam registration period: 10\textsuperscript{th} September - 16\textsuperscript{th} September 2019
Examination period II: 4\textsuperscript{th} October - 26\textsuperscript{th} October 2019

Seminar registration period for
Winter Semester 2019/20: 25\textsuperscript{th} June – 01\textsuperscript{st} July 2019

Registration periods of the Department of Politics and Public Administration:

Exam registration period I: 01\textsuperscript{st} May – 15\textsuperscript{th} June 2019
Exam registration period II: 13\textsuperscript{th} September – 18\textsuperscript{th} September 2019
Exam Registration Periods of the Department of Computer and Information Science

Registration: Via StudIS

Registration periods:
Lectures – 1st exams: tba
Lectures – 2nd exams: tba
Seminars: tba

Exam Registration Periods of the Department of History and Sociology

Registration period (StudIS): 1st May – 15th June 2019

Exam Registration Periods of the Department of Mathematics and Statistics

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

Exam Registration Periods of the Department of Psychology

Not yet online

Dates of the Winter Semester 2019/20

Lectures begin: Monday, 21st October 2019
Lecture-free period: 21st December, 2019 – 4th January, 2020
Lectures end: Saturday, 15th February 2020
1. Foundations of Data Science

Focus Area: Computer Sciences

**Information Visualization I**, 2+2 hours (6 ECTS)  
T. Polk  
Monday, 10:00 - 11:30, C 358  
Tutorials:  
Group I: Wednesday, 13:30 - 15:00, D 247  
Group II: Thursday, 11:45 - 13:15, D 201

**Konzepte der Informatik**, 4+2 hours (6 ECTS)  
B. Pampel  
Tuesday, 10:00 - 11:30, A 702  
Friday, 10:00 – 11:30, A 702  
Tutorials:  
Group I: Wednesday, 13:30 - 15:00, P 602  
Group II: Thursday, 17:00 – 18:30, P 602  
Only in combination with:  
**Programmierkurs I**, 2+2 hours (6 ECTS)  
J. Fuchs  
Wednesday, 11:45 - 13:15, A 702  
Tutorials:  
Group I: Monday, 15:15 – 16:45, L 829  
Group II: Monday, 17:00 – 18:30, L 829  
Group III: Tuesday, 15:15 – 16:45, ML 630

Focus Area: Mathematics

**Analysis und Lineare Algebra**, 4+2 hours (9 ECTS)  
S. Kosub  
Wednesday, 10:00 - 11:30, R 513  
Thursday, 10:00 - 11:30, R 513  
5 Tutorials, for time and room see: ZEuS

Focus Area: Social Scientific Methods

**Econometrics I**, 4+2 hours (8 ECTS)  
W. Pohlmeier  
Thursday, 08:15 - 09:45, A 701  
Friday, 08:15 - 09:45, A 701  
7 Tutorials, for time and room see: ZEuS

**Methoden II**, 2 hours (5 ECTS)  
T. Kuhlmann  
Monday, 13:30 – 15:00, R 711
Focus Area: Statistics

Statistics I (Dept. of Economics), 2+2 hours (6 ECTS)  
Friday, 10:00 – 11:30, R 711  
R. Brüggemann

9 Tutorials, for time and room see: ZEuS

Statistics (Dept. of Politics and Public Administration), 4 hours (9 ECTS)  
Tuesday, 15:15 – 16:45, R 712  
Wednesday, 10:00 - 11:30, R 711  
S. Shikano

Statistik (Dept. of Sociology), 2+2 hours (7 ECTS)  
Monday, 10:00 – 11:30, A 702  
or
Tuesday, 13:30 – 15:00, A 703  
M. Buis

5 Tutorials, for time and room see: ZEuS

2. Advanced Methods: Computer Science

Big Data Management and Analysis, 2+2 hours (6 ECTS)  
Tuesday, 15:15 – 16:45, A 702  
M. Grossniklaus

Tutorial: Wednesday, 17:00 – 18:30, A 702

Algorithmen und Datenstrukturen, 4+2 hours (9 ECTS)  
Monday, 10:00 – 11:30, M 629  
Tuesday, 10:00 – 11:30, M 629  
S. Storanndt

5 Tutorials, for time and room see: ZEuS

Only in combination with:

Programmierkurs II, 2 hours (3 ECTS)  
Monday, 15:15 – 16:45, A 703  
S. Storanndt

Datenbanksysteme, 4+2 hours (9 ECTS)  
Monday, 13:30 – 15:00, A 701  
Tuesday, 11:45 – 13:15, A 701  
M. Scholl

5 Tutorials, for room and time see: ZEuS

3. Advanced Methods: Statistics

Probability Theory and Statistical Inference, 2+2 hours (8 ECTS)  
Monday, 08:15 – 09:45, C 424  
Monday, 10:00 – 11:30, C 424  
L. Grigoryeva

Microeconometrics, 3+2 hours (8 ECTS)  
Thursday, 10:00 – 11:30, F 425  
Friday, 10:00 – 11:30, fortnightly, F 425  
W. Pohlmeier

Tutorial: Monday, 15:15 – 16:45, G 300  
P. Heiler
Research Design II: Statistical Modelling and Inference in Quantitative Research, 2+2 hours (9 ECTS) M. Hermann
Thursday, 10:00 – 11:30, A 704

Tutorials:
Wednesday, 15:15 – 16:45, BS 217
Thursday, 15:15 – 16:45, BS 217

Applied Time Series Analysis, 3 hours (8 ECTS) R. Brüggemann
Monday, 11:45 – 13:15, D 436
Friday, 11:45 – 13:15, fortnightly, D 436
Tutorial: Friday, 11:45 – 13:15, fortnightly, D 436 + CIP Pool M. Daniele

Machine Learning, 2+1 hours (6 ECTS) L. Grigoryeva
Tba

4. Programming and Scripting

Data Analysis with R, (7 ECTS) M. Herrmann
Friday, 08:15 – 09:45, BS 217

Datenanalyse mit R, (7 ECTS) M. Herrmann
Group A: Friday, 10:00 – 11:30, BS 217
Group B: Friday, 13:30 – 15:00, BS 217

Programmierkurs I, 2+2 hours (6 ECTS) J. Fuchs
Wednesday, 11:45 - 13:15, A 702

Tutorials:
Group I: Monday, 15:15 – 16:45, L 829
Group II: Monday, 17:00 – 18:30, L 829
Group III: Tuesday, 15:15 – 16:45, ML 630

Programmierkurs II, 2 hours (3 ECTS) S. Storandt
Monday, 15:15 – 16:45, A 703

5. Social Science Applications

Summer School on Econometrics and Machine Learning (6 ECTS) L. Grigoryeva/W. Pohlmeier
Sept. 22 - 29, 2019 in Anapa (Russia) on the Black Sea or
17/10/19, 09:00-17:00, F425
18/10/19, 09:17:00, F425

The summer school is a joint endeavor of Plekhanov University, Moscow, and the University of Konstanz. Participation in the Summer School counts as a Master Seminar in Econometrics with 6 ECTS. Students who are not able to attend the Summer School have the opportunity to present their seminar paper in a block seminar in the first week of the lecture period of the Winter term (see above). Participation in the Summer School will be almost fully funded (travel expenses, room and board). A small participation fee (ca. 100 euro) will be charged though.
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<th>Time</th>
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<td>Econometrics I / Pohlmeier</td>
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<td>10:00 – 11:30</td>
<td>Information Visualization I / Polk</td>
<td>Konzepte der Informatik / Pampel</td>
<td>Statistics / Shikano Analysis and Lineare Algebra / Kosub</td>
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<td>Statistics I / Brüggemann Konzepte der Informatik / Pampel</td>
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<td>13:30 – 15:00</td>
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<td>Data analysis with R / Herrmann</td>
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<td>Microeconometrics (L) / Pohlmeier</td>
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<td>Applied Time Series (L) / Brüggemann</td>
<td>Datenbanksysteme / Scholl</td>
<td>Programmierkurs I / Fuchs</td>
<td>Research Design II (L) / Herrmann</td>
<td>Datenanalyse mit R/ Herrmann</td>
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<td>Programmierkurs II / Storandt Microeconometrics (T) / Heiler</td>
<td>Big Data Management and Analysis (L) / Grossniklaus</td>
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PREVIEW WINTER SEMESTER 2019/20

1. Introduction to Computational Methods for the Social Sciences  K. Donnay

2. Foundations of Data Analysis

**Focus Area: Computer Sciences**
Information Vizualisation, (6 ECTS)  N.N.

**Focus Area: Mathematics**
Diskrete Mathematik und Logik, (9 ECTS)  N.N.
Datenmathematik, (9 ECTS)  N.N.
Mathematik für Wirtschaftswissenschaftler, 4 + 2 hours (9 ECTS)  N.N.
Lineare Algebra, 4 + 2 hours (9 ECTS)  N.N.

**Focus Area: Statistics**
Statistik I (Dept. of Psychology), 2 + 2 hours (6 ECTS)  N.N.

**Focus Area: Social Scientific Methods**
Introduction to Survey Methodology, 2 + 2 hours (9 ECTS)  N.N.
Methoden der emp. Politik- und Verwaltungsforschung, 4 hours (9 ECTS)  N.N.
Empirie: Quantitative Methoden, 2 + 2 hours (6/7 ECTS)  N.N.
Research Design I, 2 + 2 hours (9 ECTS)  N.N.
Methoden I, (5 ECTS)  N.N.

2. Advanced Methods: Computer Science

Konzepte der Programmierung (6 ECTS) in combination with Programmierkurs III (6 ECTS)  N.N.

3. Advanced Methods: Statistics

Advanced Econometrics, 3 + 2 hours (10 ECTS)  N.N.
Advanced Time Series Analysis, (8 ECTS)  N.N.

4. Programming and Scripting

Data Analysis with R, (7 ECTS)  N.N.
Datenanalyse mit R, (7 ECTS)  N.N.
Programmierkurs I, (6 ECTS)  N.N.
Programmierkurs III, (6 ECTS)  N.N.