Course Catalogue

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

First Year/Second Year

Winter Semester 2021/2022

Version: 16/09/2021
Course Advice for Students of the Master's Programme in Social and Economic Data Science

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Student Course Guidance:  
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Dates of the Winter Semester 2020/2021

Welcome Meeting for new MSc SEDS students: 18/10/2021, 10:00 – 11:30, Y 311  
Welcome Programme for new Master's students Monday, 11th – Friday, 22nd October 2021  
Lectures begin: Monday, 25th October 2021  
Lecture-free period: Friday, 24th December 2021 – Thursday, 6th January 2022  
Lectures end: Tuesday, 12th February 2022

Registration period of the Department of Economics:

Seminar registration period for Winter Semester 2021: 29th June – 5th July 2021  
Seminar registration period for Summer Semester 2022: 18th January – 25th January 2022  
Exam Registration period: 18th January – 25th January 2022  
Examination period I: 9th February – 26th February 2022  
Exam Registration period: 15th March – 21st March 2022  
Examination period II: 26th March – 14th April 2022

See: https://www.wiwi.uni-konstanz.de/en/advice-and-service/examination-office/

Registration period of the Department of Politics and Public Administration:

Exam and Seminar Registration period I: 1st December 2021 – 15th January 2022  
Registration period II: 16th March 2022 – 20th March 2022  
Examination Dates: https://www.polver.uni-konstanz.de/service/formalitaeten/fristen-und-termine/
Exam Registration Periods of the Department of Computer and Information Science

Registration: Via ZEuS or with the offline-registration-form within the registration period
Reg. Period I (lectures): t.b.a
Reg. Period II (lectures): t.b.a (if available)
Examination dates, etc: https://www.informatik.uni-konstanz.de/en/service-and-support/examinations/exam-registration/

Exam Registration Periods of the Department of History and Sociology

Registration period (ZEuS): Summer semester: 01st May – 15th June
Winter semester: 01st December – 15th January
https://www.soziologie.uni-konstanz.de/en/study/ba-sociology/study-organisation/deadlines/

Exam Registration Periods of the Department of Mathematics and Statistics

Registration: Students can apply up to one week before the exam.
Examination office: www.mathematik.uni-konstanz.de/beratung-und-service/pruefungsverwaltung/

Exam Registration Periods of the Department of Psychology

Examination dates: 1st January – 31st of January 2022
https://www.psychologie.uni-konstanz.de/studieren/pruefungen-krankheit/
Examination office (Serpil Hummel): https://www.psychologie.uni-konstanz.de/beratung-und-service/ansprechpartner/
PREPARATION COURSES for new master’s students
(free of charge)

Department of Economics:

Python Block Course see “Programming and Scripting” on page 8!

PREP 1: Econometrics (Video lectures and Q&A sessions)  W. Pohlmeier
Thursday, 7/10/21, 17:00-18:30, online
Tuesday, 12/10/21, 17:00-18:30, online
Monday, 18/10/21, 17:00-18:30, online

See here

PREP 2: Quantitative Methods in Economics  J. Alasalmi
(Link to lecture videos will be sent around via e-mail)

Thursday, 11/10/21, 14:00 - 14:30, Intro, online
Monday, 14/10/21, 14:00 - 15:30, Q&A meeting I, online
Tuesday, 18/10/21, 14:00 - 15:30, Q&A meeting II, online
Monday, 20/10/21, 14:00 - 15:30, Q&A meeting III, online
Friday, 22/10/21, 14:00 - 15:30, Q&A meeting IV, online

See here

Department of Computer Sciences:

Kompaktkurs Mathematik 1 (Duration: 5 days, online, German only)  S. Kosub
Monday, 11/10/21, 13:30 – 16:00, R712
Tuesday, 12/10/21, 9:00 – 16:00, R513
Wednesday, 13/10/21, 9:00 – 16:00, R513
Thursday, 14/10/21, 9:00 – 16:00, R513
Friday, 15/10/21, 9:00 – 16:00, A701

See ZEuS
First Semester

1. Introduction to Computational Methods for the Social Sciences

Introduction to Computation for the Social Sciences (9 ECTS) J. Kulshrestha
Monday, 11:45 – 13:15, online

Tutorial:
Group 1: Friday, 10:00 – 11:30, D522 M. Wessel/
Group 2: Friday, 11:45 – 13:15, D522 J. Wassmuth

Please note: In preparation for “Introduction to Computation for the Social Sciences” we advise all new MSc SEDS Students to take the Python Block Course in October (see “Programming and Scripting”).

2. Foundations of Data Science

Computer Science

Data Mining: Basic Concepts (6 ECTS) J. Fuchs / D. Keim
Thursday, 11:45 – 13:15, R513

Tutorial:
Group 1: Wednesday, 11:45 – 13:15, ZT702
Group 2: Wednesday, 13:30 – 15:00, ZT702
Group 3: Wednesday, 15:15 – 16:45, ZT702

The course “Data Visualisation: Basic Concepts” will be offered during the summer semester.

Konzepte der Informatik (6 ECTS) B. Pampel
Monday, 10:00 - 11:30, R712
Tuesday, 11:45 – 13:15, R712

Tutorial:
Six groups, see ZEuS

Only in combination with

Programmierkurs I (Imperative Sprache) (6 ECTS) J. Fuchs
Tuesday, 15:15 – 16:45, online

Tutorial:
Six groups, see ZEuS
Mathematics

Diskrete Mathematik und Logik (9 ECTS)  
S. Kosub
Wednesday, 10:00 – 11:30, online  
Thursday, 10:00 – 11:30, online
Tutorial:  
Six groups, see ZEuS

Lineare Algebra I (6 ECTS)  
M. Schweighofer
Group 1: Monday, 13:30 – 15:00, A 600  
Group 2: Thursday, 10:00 – 11:30, A 600
Tutorial: t.b.a.

Mathematik für Wirtschaftswissenschaftler I (9 ECTS)  
J. Schropp
Thursday, 08:15 – 09:45, A 600  
Friday, 11:45 – 13:15, A 600
Tutorial:  
15 Groups, see ZEuS

Datenmathematik (9 ECTS)  
S. Kosub
Tuesday, 15:15 – 16:45, R513  
Thursday, 13:30 – 15:00, R611
Tutorial:  
4 Groups, see ZEuS

Social Science Methods

Introduction to Survey Methodology (6+3 ECTS)  
P. Selb
Thursday, 11:45 – 13:15, online
Tutorial: tba

Research Design I: Research Design and Causal Inference (9 ECTS)  
P. Selb, et.al.
Group 1: Wednesday, 17:00 – 18:30, C423  
Group 2: Wednesday, 17:00 – 18:30, D432  
Group 3: Wednesday, 17:00 – 18:30, D433  
Group 4: Wednesday, 17:00 – 18:30, online

Empirical Research Methods (9 ECTS)  
S. Shikano
Tuesday, 15:15 – 16:45, online  
Wednesday, 10:00 - 11:30, online

Empirie: Quantitative Methoden (6 ECTS)  
T. Hinz
Tuesday, 15:15 – 16:45, R611
Tutorial:  
6 groups, see ZEuS
Statistics

Statistik 1 (5 ECTS)  
Tuesday, 11:45 – 13:15, online  
Y. Shevchenko

Tutorial:  
Wednesday, 11:45 – 13:15, online  
M. Miccoli

Third Semester

1. Advanced Methods: Computer Science

Advanced SQL (9 ECTS)  
Monday, 13:30 - 15:00, online  
Tuesday, 10:00 - 11:30, online  
AG Scholl

Tutorial:  
Wednesday, 10:00 - 11:30, online

Konzepte der Programmierung (6 ECTS)  
Tuesday, 08:15 – 9:45, A703  
Wednesday, 08:15 – 9:45, R513  
M. Grossniklaus

Tutorial:  
4 Groups, see ZEuS

Only in combination with

Programmierkurs III (Deklarative Sprache) (6 ECTS)  
Wednesday, 13:30 – 15:00, R712  
L. Wörteler

Network Modeling and Relational Machine Learning (6 ECTS) *  
Wednesday, 8:15 – 9:45, online  
J. Lerner

Tutorial:  
Thursday, 8:15 – 9:45, online

Probabilistic Modelling for Computer Scientists (6 ECTS) *  
Tuesday, 11:45 – 13:15, online  
T. Petrov

Tutorial:  
Wednesday, 11:45 – 13:15, online

* can also be recognized in the module “Advanced Methods: Statistics”

2. Advanced Methods: Statistics

Advanced Econometrics (10 ECTS)  
Wednesday, 08:15 - 09:45, A703  
Friday, 08:15 - 09:45, A703  
W. Pohlmeier

Tutorial:  
4 Groups, see ZEuS
Advanced Time Series Analysis (8 ECTS)  
Monday, 10:00 – 11:30, D436  
Every two weeks, see ZEuS  

R. Brüggemann

Applied Bayesian Statistics (7 ECTS)  
Tuesday, 10:00 – 11:30, online

S. Shikano

Network Modeling and Relational Machine Learning (6 ECTS)  
Wednesday, 8:15 – 9:45, online

J. Lerner

Tutorial:
Thursday, 8:15 – 9:45, online

Probabilistic Modelling for Computer Scientists (6 ECTS)  
Tuesday, 11:45 – 13:15, online

T. Petrov

Tutorial:
Wednesday, 11:45 – 13:15, online

3. Programming and Scripting

Python Block Course (6 ECTS) – 5 days  
October 2021, 18/10/21 – 22/10/21, online

D. Krieger et.al

Monday, 18.10.2021, 13:00, online kick-off meeting
Tuesday – Friday, 10:00, short lectures via the virtual platform “DataCamp”. Sessions are followed by practical programming exercises that students are required to complete by the end of the day.

Please note:
This course is recommended as preparation for “Introduction to Computation for the Social Sciences”.

Data Analysis with R (7 ECTS, English)  
Thursday, 08:15 – 09:45, online

M. Herrmann

Datenanalyse mit R (7 ECTS, German)  
Thursday, 10:00 – 11:45, online

M. Herrmann

Programmierkurs I (Imperative Sprache) (6 ECTS)  
Tuesday, 15:15 – 16:45, online

J. Fuchs

Tutorial:
Six groups, see ZEuS

Programmierkurs III (Deklarative Sprache) (6 ECTS)  
Wednesday, 13:30 – 15:00, R712

L. Wörteler

4. Social Science Applications

Multi-level Data Analysis (9 ECTS, Dept. Sociology)  
Friday, 10:00 – 11:30, E405

M. Buis

Wahlsystemforschung (6 ECTS, Dept. Politics and Public Admin.)  
Tuesday, 13:30 – 15:00, online

S. Shikano
Create Internet-based experiments, conduct Big Data research, write articles (4 ECTS, Dept. Psychology) – 4 days

U. Reips

Monday, 18/10/2021, 11:00 – 17:00, G304
Tuesday, 19/10/2021, 11:00 – 17:00, G304
Wednesday, 20/10/2021, 11:00 – 17:00, G304
Friday, 04/02/2022, 13:30 – 18:00, H309

All seminars listed above are examples for seminars for the Module Social Science Applications. But it is up to every SEDS student to search in ZEuS for other seminars/lectures that can be recognised within the Advanced Modules.

For questions regarding seminars/lectures please proceed as follows:

- Check if your desired seminar/lecture is listed in the MSc SEDS Additional Course /Seminar list
- If not, send an email to the MSc SEDS Programme coordinator by Friday, 29th of October to clarify if the seminar/lecture is suitable in one of the advanced modules.

Please note:

Because of the Covid-19 situation we highly recommend contacting the lecturers of the seminars prior to the start of the semester to make sure that there are spots for MSc SEDS students available.

FOR MORE INFORMATION ON THE CONTENT AND POSSIBLE REGISTRATION PROCEDURES FOR ON-CAMPUS COURSES, PLEASE CHECK THE HOMEPAGE OF THE RESPECTIVE LECTURER AND ZEUS!
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<th>Time</th>
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<td>Konzepte der Informatik (L) / Pampel</td>
<td>Diskrete Mathematik und Logik (L) / Kosub</td>
<td>Diskrete Mathematik und Logik (L) / Kosub</td>
<td>Introduction to Computation for the Social Sciences (T) / Group A Wessel/Wassmuth</td>
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<td>11:45 - 13:15</td>
<td>Introduction to Computation for the Social Sciences (L) / Kulshrestha</td>
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<td>Data Mining Basic Concepts (T) / Fuchs/Keim Group 1</td>
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<td>Data Mining Basic Concepts (T) / Fuchs/Keim Group 2</td>
<td>Datenmathematik (L) / Kosub</td>
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<td>Programmierkurs I (L) / Fuchs</td>
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L = Lecture, T = Tutorial, S = Seminar
## Timetable Advanced Modules Winter Semester 2021/2022

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<td>Advanced Time Series Analysis (L) / Brüggemann</td>
<td>Advanced SQL (L) / Scholl</td>
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