



Applied Geodata Science I

Logistics

Prof. Dr. Benjamin Stocker
Spring semester 2023



Prof. Benjamin Stocker



Dr. Koen Hufkens



Pepa Arán



Pascal Schneider



Prof. Benjamin Stocker



Dr. Koen Hufkens



Pepa Arán



Pascal Schneider

Input lectures



Book chapter author



Exercises author



Supporting exercises



How does AGDS I work?

How does AGDS I work?

- English

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- English
- Hybrid setup: input lectures + flipped classroom

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Session N

- Input lecture on Chapter N and catch-up
- *Before class:* Read Chapter N
- *In class:* Solve Exercises on Chapter N
- *Homework:* Finish Exercises on Chapter N

How does AGDS I work?

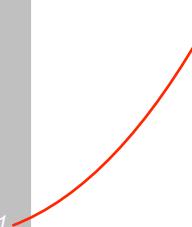
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Session $N-1$

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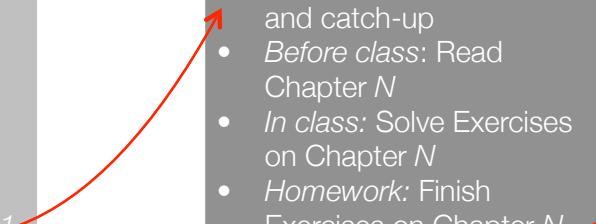
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Session $N+1$

- Input lecture on Chapter $N+1$ and catch-up
- *Before class:* Read Chapter $N+1$
- *In class:* Solve Exercises on Chapter $N+1$
- *Homework:* Finish Exercises on Chapter $N+1$



How does AGDS I work?

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Session N-1

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- *Before class:* Read Chapter $N-1$
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- *Before class:* Read Chapter $N+1$
- *In class:* Solve Exercises on Chapter $N+1$
- *Homework:* Finish Exercises on Chapter $N+1$

Before class: 2 h

2 h

Homework: 3-4 h

How does AGDS I work?

1 Getting started 20.02.

- Report Exercise: Workspace

2 Programming primers 27.02.

3 Data wrangling 06.03.

- Report Exercise: Tidy data

4 Data visualisation 13.03.

- Report Exercise: Air quality data

5 Data variety 20.03.

6 Open Science practice 27.03.

7 Code management 03.04.

- Report Exercise: Collaborating with git

8 CARE SESSION I 17.04.

- Work on R. Ex. 7 **as team exercise!**

9 Regression 24.04.

- Report Exercise: Stepwise regression

10 Supervised ML I 01.05.

- Report Exercise: KNN

11 Supervised ML II 08.05.

- Report Exercise: Flux modelling

12 Random Forest 15.05.

13 CARE SESSION II 22.05.

- Catch-up and preparations for final report

FINAL REPORT

- Hand in as reproducible code (*git* repository)
- Repo 1: Consists of seven elements implementing Report Exercises (separate RMarkdown files)
- Repo 2 and 3: From Report Ex. 7

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Final report

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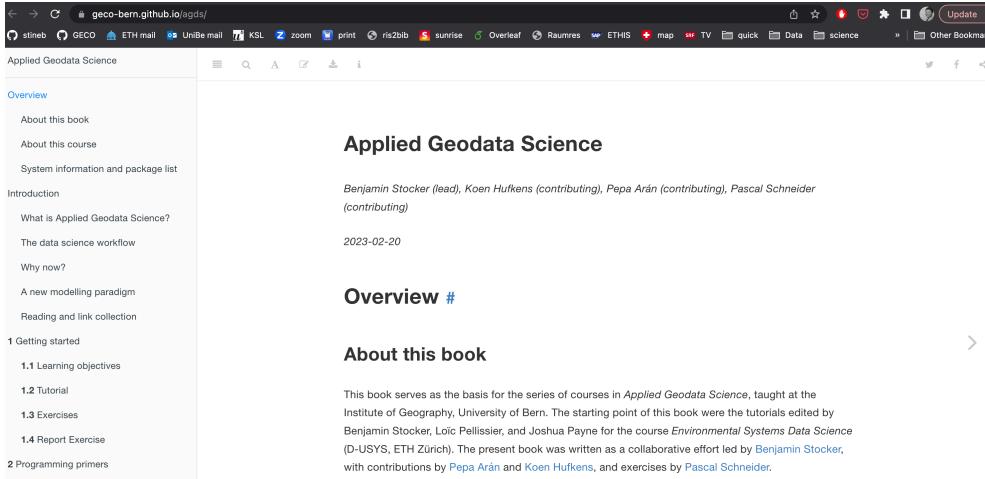
Criteria:

- Reproducible
- Coding practice
- Quality of visualisations
- Workspace structure (files, directories)
- Interpretation

- **Hand in by 08.06. 8.00 CET**

Lecture notes

- Online book as lecture notes:
geco-bern.github.io/agds



The screenshot shows a web browser window with the URL geco-bern.github.io/agds/ in the address bar. The page content is as follows:

- Applied Geodata Science**
- Overview**
- About this book
- About this course
- System information and package list
- Introduction
- What is Applied Geodata Science?
- The data science workflow
- Why now?
- A new modelling paradigm
- Reading and link collection
- 1 Getting started
 - 1.1 Learning objectives
 - 1.2 Tutorial
 - 1.3 Exercises
 - 1.4 Report Exercise
- 2 Programming primers

Applied Geodata Science

Benjamin Stocker (lead), Koen Hufkens (contributing), Pepa Arán (contributing), Pascal Schneider (contributing)

2023-02-20

Overview #

About this book

This book serves as the basis for the series of courses in *Applied Geodata Science*, taught at the Institute of Geography, University of Bern. The starting point of this book were the tutorials edited by Benjamin Stocker, Loic Pellissier, and Joshua Payne for the course *Environmental Systems Data Science* (D-USYS, ETH Zürich). The present book was written as a collaborative effort led by Benjamin Stocker, with contributions by Pepa Arán and Koen Hufkens, and exercises by Pascal Schneider.

- Contains all contents
- As reproducible code
- With exercises and solutions for self-study
- **WARNING:
MODIFICATIONS UNTIL
FRIDAY 24.02.**

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The screenshot shows the ILIAS interface for the course 'AGDS I'. The top navigation bar includes links for Magazin, Philosophisch-naturwissenschaftliche Fakultät, Geographie, FS2023, Vorlesung, and the specific course code 480094-FS2023-0: AGDS I. On the left, there is a sidebar with icons for Arbeitsraum, UniBE, Meldungen, and Support. The main content area displays a session entry for '22. Mai 2023, 14:15 - 16:00: Applied Geodata Science I' and a link to 'Zukünftige Sitzungen ausblenden'. Below this is a section titled 'Inhalt' containing a link labeled 'Course Logistics'. A large red arrow points from the bottom left towards this 'Course Logistics' link.

Our expectations towards you

Our expectations towards you

- Read the Chapters ahead of class.

Our expectations towards you

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- Use our service most effectively.

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- Keep up.

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Our expectations towards you

- Read the Chapters ahead of class.
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- Keep up.
- Don't accumulate questions.
- These are your tools for your journey with data.

Our expectations towards you

- Read the Chapters ahead of class.
- Use our service most effectively.
- Keep up.
- Don't accumulate questions.
- These are your tools for your journey with data.
- Be kind.

Our expectations towards you

- Fill out Survey I:
<https://tinyurl.com/agds01>

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- Handing over to ...
for setup and installations



Pepa Arán