COURSE TITLE

SEMESTER

Instructor:	Instructor name	**Time:**	Time of the seminar
E-mail:	instructor.email@uni.edu	**Room:**	Room Number

Course description: This is an exemplary syllabus that can be easily adjusted toward the specific needs of the instructor. It contains some text chunks and is mostly populated with blind text.

Requirements: Download and install R and R Studio. Throughout the class, we will mainly rely on RStudio Cloud (a browser based version of R). To follow the course, please sign up here (free version).

Student hours: Upon request. Please contact me via e-mail (including a short description of your problem or question).

Important Deadlines:

1) Complete "Intro to R" (online course) 04.10.2020
2) Research question 04.10.2020
3) Homework . . . . Respective week
4) Presentation of course projects . . . . 02.12.2020 (in class)
6) Term paper 10.01.2021

Submissions (1), (2), (3), (5) and (6) must be handed in electronically at 23:59 (the latest) on the respective day.

Giving a brief presentation of the course project (4) is expected in-class.

Late submission policy: Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Plagiarism: Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Grading policy: Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Class attendance and participation: The learning process of this class is based on in-class discussion and participation. Attendance and careful preparation of the course material is therefore highly recommended. This includes coming to class on time.

Laptop and phone policy: In order to ensure an active participation and to keep your attention on the important things (our class), please avoid distracting yourself through (unnecessary) electronic devices or applications. For further insights on the consequences of multitasking, I

recommend the study by Bellur, Nowak, and Hull (2015) (`https://bit.ly/2GnyTf2`). They found that in-class multitasking leads to significantly lower performance.

Interesting links: There is a number of great websites and podcasts that provide additional interesting information. See for instance R-bloggers, Methods Bites, R Graph Gallery, Towards Data Science, FiveThirtyEight, and R Weekly.

Course outline:

The optional readings consist of book chapters. To make them as accessible as possible for interested readers, I will upload some of the readings online.

I ask you to submit your assignments (**!**) within the deadline and to prepare the **one** required reading (📕) carefully. CheatSheets (💡) and additional input (✏) are optional. All the resources should help you if you need further input or want to expand your knowledge.

Week 0: Preparation

Before starting with the course, I want you to already get some first insights into R so that we can depart from a similar level.

! Online course: Intro to R

☐ Complete the class "Intro to R" (preferably **before** we meet but **no later than DATE**).

Session 1: Introduction to the seminar and intro to R I (DATE)

This session will introduce you to the seminar in general, give a brief outline of the course, and address organizational issues. We will then have a short introduction to R and R Studio and meet RMarkdown – an efficient way of typesetting text and code in R.
We will use the paper by Hultman, Kathman, and Shannon (2014) as a working example that guides us through this course – please read it carefully!

📕 Required readings

☐ Hultman, Lisa, Kathman, Jacob D., and Shannon, Megan (2014). "Beyond keeping peace: United Nations effectiveness in the midst of fighting." *American Political Science Review* 108(4): 737–753

Optional readings

∗ Healy, Kieran (2018). *Data visualization: A practical introduction*. Princeton University Press, Chapter 2.1-2.4

∗ Imai, Kosuke (2018). *Quantitative social science: An introduction*. Princeton University Press, Chapter 1.3

∗ Wickham, Hadley and Grolemund, Garrett (2016). *R for data science: Import, tidy, transform, visualize, and model data*. O'Reilly Media, Inc., Chapter 2, 6, 9, 21, 23, 24

 Additional input

☐ Link

 CheatSheet

☐ R Studio

☐ R Markdown

☐ R Markdown Reference Guide

☐ Tidyverse for Beginners

❗ Research question

Session 2: Intro to R II (DATE):

Now that we have met R, we dedicate this session to the learn more of R's logic and basics – objects, vectors, and data frames.

 Additional input

☐ Link

 CheatSheet

☐ Brief Introduction to Language Elements and Control Structures

☐ Base R

Session 3: Intro to R III (DATE):

In this session, we will learn how to import different data formats in R and have a first (descriptive) look at the data.

 Additional input

☐ Link

 CheatSheet

☐ Data Import

❗ Homework

☐ Homework 1 is due today.

Session 4: Data wrangling and merging I (DATE)

Now that we successfully loaded all data and had some first looks at the descriptive statistics, we will learn how to clean (more or less) messy data in R.

✎ Additional input

   ☐ Link

♥ CheatSheet

   ☐ Data Wrangling With `dplyr` and `tidyr`

   ☐ `overviewR`

Session 5: Data wrangling and merging II (DATE)

We then proceed and learn how to manipulate data in R to adjust it to our (format) needs before we learn how to merge the data in the next session.

✎ Additional input

   ☐ Link

♥ CheatSheet

   ☐ Data Wrangling With `dplyr` and `tidyr`

Session 6: Data wrangling and merging III (DATE)

Merging data can easily become one of the most complex parts of data processing. This session serves as a buffer session..

✎ Additional input

   ☐ Link

♥ CheatSheet

   ☐ Data Wrangling With `dplyr` and `tidyr`

❗ Homework

   ☐ Homework 2 is due today.

Session 7: Data visualization I (DATE)

In the third part of our seminar, we delve into the magic world of `gpplot2` – a great way of plotting your results in R. In the first session, we will learn the basics of `ggplot2`.

Optional readings

* Healy, Kieran (2018). *Data visualization: A practical introduction.* Princeton University Press, Chapter 3.1-3.7

✒ Additional input

☐ Link

💡 CheatSheet

☐ `ggplot2`

Session 8: Data visualization II (DATE)

In the second session, we will then produce more advanced figures with `ggplot2`. This Medium blogpost gives you an additional idea how to produce Tableau-like graphs in R.

Optional readings

☐ Healy, Kieran (2018). *Data visualization: A practical introduction.* Princeton University Press, Chapter 8.1-8.4

* Healy, Kieran (2018). *Data visualization: A practical introduction.* Princeton University Press, Chapter 7

✒ Additional input

☐ Link

💡 CheatSheet

☐ `plotly`

Session 9: Data visualization III and hackathon (DATE)

We will dedicate this session with for remaining parts of data visualization and you consult me individually for help and address open questions as well as structure your final projects.

❗ Homework

☐ Homework 3 is due today.

Session 10: Mini conference (DATE)

During this session, we will set up a mini conference setting. You will have the chance to present your course projects and receive constructive feedback from your peers that should help you when preparing your final paper.

Session 11: Outlook and wrap-up: What else can we do in R? (DATE)

To wrap up the seminar, I will give you a some insights what other cool things that you can do in and with R.

We will also have a final discussion and deal with potential challenges of your term papers. If you have any further questions or would like to discuss something particular, please feel free to contact me beforehand.

Assessment criteria

Coursework

1. Complete "Intro to R"

Before we delve into R, I want you to familiarize yourself with first basics in R.

2. Research question

To match your interests for the course projects, I ask you to submit your research questions. I will then use your research questions to group you according to your interests. Collaboration is key and group works are meant to build these synergistic learning environments where you can learn and teach from and with others. While everyone has to submit her/his individual final paper (project), you should tackle the basic (data) problems in your group together and then use your output to answer your individual research question.

I will also provide you with feedback on the feasibility and plausibility of your research question.

Deadline: DATE TIME

Submission: Online

Should be included:

- Analytical research question

- (You may also add a few explanatory sentences.)

3. Homework

I will assign homework. The homework should help you to strengthen your previously learned knowledge. To pass this coursework, **you need to pass 2 out of 3** homework.

Deadline: Respective week

Submission: Online

4. Mini conference – Presentation of course projects

The presentations give you the chance to present your projects and to receive constructive feedback from your peers.

The data presentations should not be longer than 15 minutes (**maximum**) with slides (PowerPoint, markdown (html, PDF), LaTeX (PDF)).

Deadline: DATE (in class)

Formal requirements: 15 minutes presentation with slides

Submission: Presentation (in-class)

Should be included:

- What is your group's over-arching research question/thematic focus?

- What are your research questions?

- Which data did you use?

- What is the data about?

- What is the unit of analysis and the time frame?

- How was the data collected?

- What does the data tell you about your research question(s)? (Come up with some descriptive statistics, some visualization, ...)

- Where can we access the data? (Reference, format)

- Brief concluding discussion

- Potential problems

Final examination

Term paper

The deadline for the term paper (in English) is **DATE** (**TIME**; upload as PDF).
For the purpose of consistency, please use a *coherent citation style* (see for example the APSA citation guidelines).

General requirements

1. Formal requirements

   - Cover page: university, chair, semester, course type and title, name of the instructor, title of the term paper, date; name, contact information, program and semester of the student; indicate word count

   - Table of contents: complete structure of the final paper including page numbers and informative headlines

   - Length: 5 pages in total (max. 2,000 words, will be checked); 2,000 words include only the content (*no* cover page, table of content, references, or appendices)

   - Signed statutory declaration (both in English and in German, as uploaded on ILIAS)

   - Layout: 1.5 line spacing, font size 11, Times New Roman, pagination of the text

   - Orthography and grammar

   - Formatted as a PDF or html

   - **Submit your data files and Rmarkdown file as well**

2. Scientific standards

   - Appropriate use and formal correctness of references, e.g. for example according to APSA citation style

   - Independent research

   - List of references: coherent citation style, e.g. for example according to APSA citation style

Content

1. Introduction

   - Relevance

   - Analytical research question

   - Overview of the paper's structure

2. Theoretical part: Theory and Hypotheses

   - Briefly: Theoretical argument and argumentative structure

   - Generate one hypothesis

3. Empirical part

   3.1 Research Design

      - Discussion of sample and time span/case selection

      - Discussion operationalization

   3.2 Discussion

      - Testing hypotheses using data visualization

      - Describe and interpret your results

4. Conclusion

   - Summary and critical discussion

   - Answering the research question