1 Course Description

The course examines the methodological foundations of various popular approaches in computational social science (CSS). Over the last ten years, social scientists have found themselves confronting a massive increase in available data sources. In the debates on how to use these new data, the research potential of “computational social science” has featured prominently. While a lot of attention in the current debate has featured in the adaptation of computational methods new to the social sciences, questions about how to interpret the outputs of these methods meaningfully with regard to substantial questions in the social sciences has fallen short. The current state of the field could be described as method-heavy and methodology-thin. In this course, students will be introduced to a set of novel approaches prominently used in computational social science. We will focus on the roots of these methods, underlying assumptions, and consequences thereof with regard to connecting findings to substantial research interests. We will discuss among other approaches the use of digital trace data, social network analysis, predictive modeling.

Learning Objectives: Students are familiar with a selection of the currently dominant approaches in computational social science (CSS) and are able to interpret findings of these methods meaningfully in the context of substantial questions.

2 Requirements

2.1 Regular and active participation

The course features the discussion of the required readings. To benefit from this, students are expected to read the texts listed as required readings before each session and actively participate in the discussion for each session. Participation will not be graded.

Don’t be scared off by the Background Readings. Those are meant to offer you a starting point if you decide to dig deeper into one of the topics discussed during the
course. They might offer a promising starting point for you, once you start thinking about your term paper.

Also not part of the course, but maybe helpful to get you started on implementing some of the approaches discussed here, are the readings in the How To sections. Here, you find helpful tutorials and introductions to the practical use of software and methods discussed in the sessions.

2.2 Presentation

Students will be asked to present a research paper during one of the topical session. During the first session, each student will be assigned a text from the listed readings for presentations. In preparing the presentations please use the following guiding questions:

1. What is the research question?
2. What are the concepts used in the study?
3. What are the mechanisms proposed in the study?
4. What are the hypotheses? How are they linked with concepts and mechanisms under study?
5. What empirical approach do the authors take? What is the data in use? How are the data analyzed? Does this seem appropriate?
6. What are the results and how are they connected with concepts and mechanisms under study?
7. How does the study related to the topics discussed in the required readings for the respective session?
8. How convincing do you find the arguments presented by the authors?

Beyond these guiding questions, please keep the following considerations in mind in preparing your presentation:

- Please plan your presentation to take between 10-15 minutes;
- Please prepare a slide deck with a presentation program of your choice (except for Prezi);
- Please prepare a handout of one to two pages for your fellow students, summarizing the main points of your presentation;
- Upload the handout on the day your presentation is due to the assignment folder on the course’s OLAT repository. Use the following template for the filename "your_last_name-handout...";
- The presentation will be graded and contribute 30% to your final grade;
- Please make sure to see me at least once during office hours to discuss the topic and scope of your presentation.
2.3 Term Paper

Following the course, students will be asked to hand in a term paper. The aim of this paper is for you to independently discuss an essay question focusing on the potential, adequate use, and interpretative challenges in the use of selected computational methods. Essay questions will be handed out during the second half of the course.

For the term paper, please adhere to the following guidelines:

- **Style requirements:**
  - Font: Times New Roman, 12pt;
  - Line-separation: 1.5;
  - Page borders: 2.5 cm left and right, 2cm above and below;
  - Page set: Block;
  - The first line of each paragraph is indented.

- **Citation Style:** Please follow the citation convention of the American Political Science Review (APSР) available at [http://www.apsanet.org/APSR-Submission-Guidelines-August-2016](http://www.apsanet.org/APSR-Submission-Guidelines-August-2016);

- **Cover page:** University, department, course title, paper title, name, Matriknr., semester count, study program, and e-mail-address;

- **Length:** ca. 3000 words +/-10%

- **Deadline:** Please return the paper on the date specified by the department (March 03, 2019) electronically at andreas.jungherr@gmail.com and by hardcopy at my University of Konstanz address (Box 85, Universitätsstrasse 10, 78464 Konstanz–D). The date is mandatory and can only be extended in case of officially certified illness;

- **Use the following template for the filename "your_last_name-paper...".**

- **The term paper will be graded and contribute 70% to your final grade;**

- **Please make sure to see me at least once during office hours to discuss the topic and scope of your term paper.**
3 Course Outline

Class will meet at the following times and locations:

Wednesdays 14:15–15:45
(BIN-0-K.11)
Exception: On Wednesdays, October 24 and November 14 we will meet in Room AFL-F-121)

3.1 Week 1: Introduction (September 19)
3.2 Week 2: No meeting (September 26)
3.3 Week 3: Computational Social Science (October 3)
3.4 Week 4: No meeting (October 10)
3.5 Week 5: Digital Traces (October 17)
3.6 Week 6: Measurement (October 24)
3.7 Week 7: Prediction (October 31)
3.8 Week 8: No meeting (November 7)
3.9 Week 9: Classification & Scoring (November 14)
3.10 Week 10: Text as Data (November 21)
3.11 Week 11: Networks (November 28)
3.12 Week 12: Experiments (December 5)
3.13 Week 13: Simulation (December 12)
3.14 Week 14: Discussion of Open Questions and Term Paper (December 19)
3.1 Week 1: Introduction (September 19)
Introduction, housekeeping, and assignment of presentations.

3.2 Week 2: No meeting (September 26)

3.3 Week 3: Computational Social Science (October 3)
Required Reading:

How To:

Background Readings:

3.4 Week 4: No meeting (October 10)

3.5 Week 5: Digital Traces (October 17)
Required Reading:

Background Readings:

How To:
3.6 Week 6: Measurement (October 24)

Required Reading:

Background Readings:

Presentations:

3.7 Week 7: Prediction (October 31)

Required Reading:

Background Readings:
Presentations:

3.8 Week 8: No meeting (November 7)

3.9 Week 9: Classification & Scoring (November 14)

Required Reading:

Background Readings:

How To:

Presentations:

3.10 Week 10: Text as Data (November 21)

Required Reading:

Background Readings:

**How To:**

**Presentations:**

### 3.11 Week 11: Networks (November 28)

**Required Reading:**

**Background Readings:**

**How To:**

**Presentations:**
3.12 Week 12: Experiments (December 5)

Required Reading:

Background Readings:

Presentations:

3.13 Week 13: Simulation (December 12)

Required Reading:

Background Readings:

How To:
Presentations:

### 3.14 Week 14: Discussion of Open Questions and Term Paper (December 19)