Socio-Informatics 348

Computational Social Science

Dr Lisa Martin

Department of Information Science
Stellenbosch University

Welcome

- Welcome to **Computational Social Science**.
- Aim: Equip students to answer social science questions using computational methods.
- This is an interdisciplinary course: sociology, data science, economics, political science.
- No prior programming experience is expected.

Module Goals

By the end of the course, you will be able to:

1. Describe key features of social research in the digital age.
2. Identify appropriate computational methods for social science questions.
3. Use data wrangling and exploratory data analysis techniques.
4. Write and execute basic code for data analysis.
5. Work with digital trace data using R.

Prescribed Literature

We will use:

- **R for Data Science** (2nd ed), Wickham et al. (https://r4ds.hadley.nz)
- **Bit by Bit**, Salganik (https://bitbybitbook.com)
- **Text Mining with R**, Silge & Robinson (https://www.tidytextmining.com)
- **Computational Communication**, van Atteveldt et al. (https://cssbook.net)

Class Times and Venues

Lectures:

- Mon 14:10 – Arts 225
- Wed 11:10 – **Arts 227** (please note change)
- Fri 12:10 – Arts 227

Practicals:

- Group 1: Mon 10:10 & Fri 08:10 – HUMARGA 320
- Group 2: Tue 10:10 & Fri 09:10 – HUMARGA 357/363
- Group 3: Wed 08:10 (HUMARGA 357/363) & Thu 15:10 (HUMARGA 320)

Practical Groups

Practicals: Please select your group on SocSciLearn.

- The group selection will open after this class.
- Please attend only the practicals for your group.
- Submission of a completed (i.e., at least 80% of exercises attempted) practical file to SocSciLearn by the deadline will earn you 1% for each practical.
- Compulsory attendance of at least one of your group's sessions.

Assessment Overview

You must complete:

- Any 2 of 3 assessments (A1, A2, A3)
- All AF assessments (10 practicals + 1 assignment)

Schedule:

- A1: 4 Sep, 17:40 (35%)
- A2: 4 Nov, 09:00 (35%)
- A3: 28 Nov, 09:00 (35%)
- Practicals: weekly participation (10%)
- Assignment: 10 Oct (20%)

Lesson Planning

Week	Lecture	Day	Date	Content	Chapters	Practical
1	1	M	21-Jul	Module introduction		
	2	W	23-Jul	Computational social science and the data analysis process	Salganik: 1, 2; R4DS: intro	
	3	F	25-Jul	Intro to R, Workflows, and Quarto	R4DS: 2, 4, 6, 8, 28	
2	1	M	28-Jul	**NO CLASS**		Prac 0
	2	W	30-Jul			
	3	F	01-Aug			
3	1	M	04-Aug	Data visualisation	R4DS: 1	
	2	W	06-Aug	Data visualisation	R4DS: 1	
	3	F	8-Aug	Data transformation	R4DS: 3	
4	1	M	11-Aug	Data transformation	R4DS: 3	Prac 1
	2	W	13-Aug	Data tidying	R4DS: 5	
	3	F	15-Aug	Data importing	R4DS: 7	
5	1	M	18-Aug	Visualise - Layers	R4DS: 9	Prac 2
	2	W	20-Aug	Visualise - Exploratory data analysis	R4DS: 10	
	3	F	22-Aug	Visualise - Exploratory data analysis	R4DS: 10	
6	1	M	25-Aug	Visualise - Communication	R4DS: 11	Prac 3
	2	W	27-Aug	Transform - Logical vectors	R4DS: 12	
	3	F	29-Aug	Transform - Numbers	R4DS: 13	
7	1	M	01-Sep	Transform - Strings	R4DS: 14	Prac 4
	2	W	03-Sep	Revision A1	**(A1 scope = R4DS: ch 1 - 14; Salganik: 1, 2)**	
			04-Sep	**A1 Assessment**		
	3	F	05-Sep	Assignment Instructions		
8	1	M	08-Sep	**RECESS**		
	2	W	10-Sep			
	3	F	12-Sep			

SocSciLearn and GitHub

- Course GitHub repository:
  https://github.com/lisamartinza/si348_2025
- Course materials, including lecture slides, practicals, and assignments, will be available here.
- Submission of assignments and practicals will be done via SocSciLearn.

Final Notes

- Stay up to date via SocSciLearn/GitHub.
- Consultations:
  - Mon 15:00–16:00 – Arts 453
  - Wed 12:00–13:00 – Arts 453
  - ... or by appointment.
- Email: `lisamartin@sun.ac.za`