

Socio-Informatics 348

Computational Social Science

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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:

- ➊ Describe key features of social research in the digital age.
- ➋ Identify appropriate computational methods for social science questions.
- ➌ Use data wrangling and exploratory data analysis techniques.
- ➍ Write and execute basic code for data analysis.
- ➎ 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 – Old Main 2027
- 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 Computational social science and the data analysis process Intro to R, Workflows, and Quarto	Salganik: 1, 2; R4DS: intro R4DS: 2, 4, 6, 8, 28	
	2	W	23-Jul			
	3	F	25-Jul			
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	08-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 (A1 scope = R4DS: ch 1 - 14; Salganik: 1, 2)	Prac 4
	2	W	03-Sep	Revision A1		
	3	F	04-Sep 05-Sep	A1 Assessment 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.
- Consultations:
 - Mon 15:00–16:00 – Arts 453
 - Wed 12:00–13:00 – Arts 453
 - ... or by appointment.
- Email: `lisamartin@sun.ac.za`