

P000092, Öppen kvantitativ samhällsvetenskap, 5.0 Hp

Kursplan

Fastställd av: Fastställd av: Research School: People, Society and Sustainability (PSS),
2024-05-07, 2024-05-07

Giltig från och med: VT2025

Utbildningsnivå:

Forskarnivå

Språk:

Svenska

Behörighetskrav:

Accepted as a PhD student in social science/business studies/economics

Mål:

Upon successful completion of the course, students are expected to:

1. understand why and how common (mal)practices in scholarly research translate into low levels of replicability and low reliability;
2. understand the virtue of confirmatory research and transparent research practices regarding the credibility of research findings;
3. establish a thorough understanding of the statistical concepts related to hypothesis testing (error rates, significance, power, etc.);
4. be able to undertake a priori power calculations and sensitivity analysis, and to devise pre-analysis plans for research projects; and
5. be able to critically assess scientific projects and results with respect to malpractices, research integrity, and ethical aspects.

Innehåll:

The ultimate goal of scientific research is to accumulate knowledge. Researchers generate hypotheses and collect data in order to investigate whether or not empirical observations are consistent with these hypotheses. However, even though science aspires toward accuracy in this process, errors are inevitable (e.g., Simmons et al., 2011). A fundamental characteristic that sets empirical science apart from other sources of knowledge is the ability to self-correct; any empirical observation is subject to validation and may be shown to be wrong (Merton, 1973; Ioannidis, 2012).

The reproducibility of empirical results constitutes a cornerstone of the scientific method. But as a consequence of accumulative evidence emphasizing low levels of replicability, there is increasing concern that a considerable fraction—or even a majority—of published research claims might be simply false (Ioannidis, 2005). The drivers of this “credibility crisis” are just as manifold as the institutions (researchers, universities, funding agencies, journals, etc.) involved in the academic enterprise: the file drawer effect (Rosenthal, 1979), insufficient statistical power (e.g., Ioannidis et al., 2017), publication bias (e.g., Franko et al. 2014), confirmation bias (Sterling et al., 1995), dodgy incentives in the publication process (e.g., Nosek et al., 2012), p-hacking (e.g., Simmons et al., 2011), etc.

This course aims to provide a critical view on the “rules of a game named science” and provides an introduction to remedies to the manifold issues jeopardizing the credibility of scientific results: power calculations, confirmatory research (pre-registration), and open and transparent research practices (see, e.g., Wagenmakers et al., 2012; Miguel et al., 2014; Munafo et al., 2017).

The course will span five days. Each day will feature a three-hour session in the morning and a three-hour session in the afternoon. The sessions will involve lectures, hands-on exercises, and group discussions.

Examinationsformer och fordringar för godkänd kurs:

The learning outcomes of the lecture part will be assessed based on course participation (i.e., contribution to discussions) and a final exam. The seminar part will involve an individual homework assignment. Successful completion of both parts will be recognized with 5 credit points. - Examinatorn har, om det finns skäl och är möjligt, rätt att ge en kompletteringsuppgift till den student som inte blivit godkänd på en examination. - Om studenten har ett beslut från SLU om riktat pedagogiskt stöd på grund av funktionsnedsättning, kan examinatorn ge ett anpassat prov eller låta studenten genomföra provet på ett alternativt sätt. - Om denna kursplan läggs ned, ska SLU besluta om övergångsbestämmelser för examination av studenter, som antagits enligt denna kursplan och ännu inte blivit godkända.

- För examination av självständigt arbete (examensarbete) gäller dessutom att examinatoren kan tillåta studenten att göra kompletteringar efter inlämningsdatum. Mer information finns i utbildningshandboken.

Ansvarig institution/motsvarande:

Institutionen för ekonomi

Kompletterande uppgifter

Övrig information:

- Rätten att delta i undervisning och/eller handledning gäller endast det kurstillfälle, som studenten blivit antagen till och registrerad på.
- Om det finns särskilda skäl, har studenten rätt att delta i moment som kräver obligatorisk närvaro vid ett senare kurstillfälle. Mer information finns i utbildningshandboken.