Case-control studies, 7 1/2 hp

Course period:
March-April (starting date is not yet decided, contact Course leader if you are interested)

Course leader / Address for applications:
Olle Nerman / nerman@chalmers.se

Course description (Advertisement for Ph.D. students)

The course will discuss the case-control studies, i.e. the studies where the analysis is based on all cases and only some of the potentially available controls. The curriculum will follow closely “Case-Control Studies” by Ruth H. Keogh and D. R. Cox (Cambridge University Press, ISBN 978-1-107-019656-0), which is a new book within this area. We will start with the simpler, and quite common in this setting, methodologies, such as odds ratios and logistic regressions. Both matched and unmatched designs will be discussed. In the unmatched case, we will also consider different approaches to sampling of the controls. We will then move on to the more complex methods that have Cox regression as basis, which are also common in this field. Finally, we will touch on the construction and analysis of general modeling structures.

The preliminary plan is to meet two times a week (around two hours per meeting) up to Easter. The examination will be performed by means of a written test, taking place after Easter.
Case-control studies, 7 1/2 hp

1. Confirmation
The syllabus was confirmed by the Head of the Department of mathematical sciences 2015-02-25.

Disciplinary domain: Science
Department in charge: Department of Mathematical Sciences

2. Position in the educational system
Elective course.

3. Entry requirements
No formal requirements

4. Course content
The course will discuss the case-control studies, i.e. the studies where the analysis is based on all cases and only some of the potentially available controls. The curriculum will follow closely “Case-Control Studies” by Ruth H. Keogh and D. R. Cox (Cambridge University Press, ISBN 978-1-107-019656-0), which is a new book within this area. We will start with the simpler, and quite common in this setting, methodologies, such as odds ratios and logistic regressions. Both matched and unmatched designs will be discussed. In the unmatched case, we will also consider different approaches to sampling of the controls. We will then move on to the more complex methods that have Cox regression as basis, which are also common in this field. Finally, we will touch on the construction and analysis of general modeling structures.
5. Outcomes

6. Required reading


7. Assessment

Written exam

8. Grading scale

The grading scale comprises Fail, (U), Pass (G)

9. Course Evaluation

The course evaluation is carried out together with the Ph.D. students at the end of the course, and is followed by an individual, anonymous survey. The results and possible changes in the course will be shared with the students who participated in the evaluation and to those who are beginning the course.

10. Language of instruction

The language of instruction is English.