



Stockholms  
universitet

**STOCKHOLMS  
UNIVERSITET**  
Statistiska institutionen  
Autumn term 2019

Dan Hedlin  
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## Course description

### Sample surveys (Urvalsundersökningar), 7.5 hp, ST306G

#### CONTENTS OF THE COURSE

The course addresses sample surveys. It includes sampling designs and estimation methods for finite populations, including use of auxiliary information. It also addresses nonsampling errors. The course covers the most commonly used sampling designs: simple random sampling, stratified sampling, sampling with varying inclusion probabilities (known as  $\pi$ ps-sampling), cluster sampling, multistage sampling and systematic sampling, and to some limited extent nonrandom sampling designs. The course provides useful knowledge about planning and assessing different types of surveys designs.

The examination consists of two independent parts:

1. Sample surveys, written closed-book exam, 6 hp
2. Sample surveys, course work, 1.5 hp

One part of the course work will be done in groups, one at an individual basis.

#### LEARNING GOALS

After completing the course students should be able to

- explain the advantages and disadvantages of standard sampling designs
- choose appropriate sampling designs for different selection problems
- choose suitable estimators depending on the problem and the access to auxiliary information
- carry out estimation and precision estimation on data from some standard sampling designs, with and without auxiliary information
- describe and use some basic estimation methods for nonresponse problems

#### COURSE LITERATURE

- Sharon Lohr (2010), *Sampling: Design and Analysis*, 2nd edition, Boston: Brooks/Cole
- Additional material distributed during the course, for example, lecture notes and other material

#### EXAMINER AND TEACHERS

The Department of Statistics is located on the 7th floor in the B-building (Södra Husen). General information about the department (office hours, phone numbers, schedules etc.) is posted on the department website, [www.statistics.su.se](http://www.statistics.su.se).

<b>Teacher</b>	<b>Reception hours</b>	<b>Room</b>	<b>E-mail</b>
Dan Hedlin – lecturer, examiner, course coordinator	On agreement	B795	Dan.Hedlin@stat.su.se
Edgar Bueno		B730	<a href="mailto:edgar.bueno@stat.su.se">edgar.bueno@stat.su.se</a>

## **SCHEDULE**

The schedule with exact times and places can be found at the course website (Swedish name Urvalsundersökningar): <https://www.statistics.su.se/utbildning/alla-utbildningar/grundniv%C3%A5/urvalsunders%C3%B6kningar-7-5-hp-1.258057>

Although attendance is not mandatory, it is strongly recommended that students attend all teaching sessions in order to better achieve the learning goals.

## **EXAMINATION**

Students are assessed by examination of the learning outcomes of the student with respect to the learning goals.

### **Grades**

Grading of the course is on a criterion-referenced seven-grade scale:

A	Excellent
B	Very good
C	Good
D	Satisfactory
E	Pass
Fx	Inadequate
F	Totally inadequate

The written exam is graded A-F and the coursework is either pass or fail. To pass the course at least grade E on the written exam and grade pass on the coursework are required. The grading of the course will be based solely on the grading of the written exam, provided that the coursework is a pass. If you pass the written exam but fail the coursework, the grade of the course will be Fx.

- Students who have obtained at least grade E on the course cannot retake the exam to achieve a higher grade.
- Both Fx and F on the written exams are fails. To pass the course, the student must retake the exam.
- Students with either Fx or F on the course can redo the examination at least four times, provided that the course is still offered, to achieve at least grade E.
- A student who has obtained either grade Fx or F twice on the same exam has the right to demand another examiner the next time the student takes the same exam. This must be done in writing to the head of department.

## EXAMINATION SCHEDULE

Coursework	Handed out at Lecture L4 Thursday 10 Oct, to be handed in by email to the examiner no later than the start of Lecture L10, Tuesday 22 Oct. If you hand in nothing or do not pass, there will be an extension to Dec 5, possibly with a different coursework. If you fail at this second opportunity, there will be no other opportunity until the next time the course will be given.
Written exam	Tuesday 29 Oct, 15.00-20.00
Written exam, 2 <sup>nd</sup> and 3 <sup>rd</sup> opportunities	See schedule

### Important notes:

Students must register for the exam / re-exam at least one week in advance. Registration is done via <http://minastudier.su.se> or via e-mail to [expedition@stat.su.se](mailto:expedition@stat.su.se). If registration has been done properly, you will be sent a confirmation including a code to use at the exam. Without registration you will not be able to sit the exam.

If you pass the coursework but do not pass the written exam, neither at the first, second nor the third opportunity, then you cannot use the result of the coursework. That is, the result of the coursework is not transferable after the third exam, which will be offered in the first half of the spring term 2020 (date to be confirmed).

A student may fail if she or he is unable to answer oral questions about the coursework. Should the examiner wish to ask questions about the coursework orally, a time will be agreed on with the student.