Course handbook

Quasi-Experimentation and Statistical Analysis, 6 HP

729G88

LINKÖPINGS UNIVERSITET

HT 2021 (v. 46 – v. 2)

Course leader: Rachel Ellis
Examiner: Rachel Ellis
Administrator: Carl Löfstrand
Revised: 10/29-21

INTENDED LEARNING OUTCOMES

On completion of the course, the student should be able to:

- design a quasi-experimental study based on a research question
- conduct a quasi-experimental study in an ethically relevant way
- analyze data from a quasi-experimental study
- interpret results from a quasi-experimental study

COURSE CONTENT

The course covers:

- design of quasi-experimental research studies based on advanced quantitative methods
- validity and reliability
- statistical analyzes with two or more variables, in particular ANOVA & multiple regression analysis
- critical analysis of scientific texts
- writing scientific texts
- applied ethics

EXAMINATION

The course is examined by:

- project work with written and oral presentation, grading scale: ECTS
- individual oral presentations, grading scale: Pass/fail
- active participation in seminars, grading scale: Pass/fail

To pass the course, you must pass all three parts. The final grade is based on the project work.

GRADES

The course is graded using ECTS grades, A-F. Written feedback will be provided

Students failing an exam covering either the entire course or part of the course twice are entitled to have a new examiner appointed for the reexamination. Students who have passed an examination may not retake it in order to improve their grades.

TEACHING AND WORKING METHODS

The course will take place via Zoom – links to each session will be available on Lisam.

Teaching will take the form of lectures, seminars, labs and group work. Students are expected to work independently, both alone and in groups.

NOTE: 6 HP = 160 hours of work

       Timetabled = 34 hours

       Independent study = 126 hours

Lectures

During the course, a number of lectures will be held. Attending the lectures will help you with the assignments, but it is not obligatory. The following lectures are planned:

Lecture 1 – Course Introduction

Lecture 2 – Statistics refresher

Lecture 3 – ANOVA 1

Lecture 4 – ANOVA 2

Lecture 5 – Critical analysis of articles

Lectures 6 & 7 – Regression & assignment Q&A (double session, including course evaluation)

Lecture 8 – Writing a scientific report

Lecture 9 – Q & A

Lab classes

Two lab classes will be held. Here you will use the programme Jamovi to analyse and visualise data. Jamovi can be downloaded for free from this website:
https://www.jamovi.org/download.html

Attending the lab classes will help you with the assignments, but it is not obligatory. The following classes are planned:

Jamovi lab 1 - ANOVA

Jamovi lab 2 - Regression

Journal Clubs (obligatory, 1HP – active participation in the seminars, U/G; 1HP – individual written assignment, U/G)

You will be split into groups. Each person in the group will be responsible for leading one session, and actively participating in the remaining three sessions. Active participation means taking part in discussions and asking at least two questions about every article. The session leader is responsible for choosing a scientific article and sending to the other members of the group at least one week before the session. The article should be an original research article from a peer-reviewed scientific journal. The session leader should present the article to the group and lead the subsequent discussion. After the session, the session leader needs to write a report (3-4 pages, submitted via Lisam) consisting of a critical analysis of the article, with a short summary of and reflection on the group discussion. In addition, please include a list of the questions that were asked by each group member (including who asked which questions). To pass this assignment, it is necessary to demonstrate that you are able to critically analyse, not just summarise, your chosen article. Note that you are only required to submit one written assignment (when you are the session leader), but you are required to attend, and avtively participate in, all four sessions.

Project report (4 HP, ECTS)

The final report will take the form of a scientific article. The article will be written in pairs, and will be based on a dataset that will be provided on Lisam. Using the data and an accompanying description of the dataset, each pair will formulate at least three research questions, on which the report will be based.

Deadlines:

-By Friday 26th November, 17:00: Email Rachel (rachel.ellis@liu.se) with details of who you will work with

-On Monday 29th November: Instructions for the assignment (including grading criteria) will be available on Lisam

-By Tuesday den 7th December, 17.00: Your three research questions to be submitted via Lisam

- By Friday 7th January, 17:00: Report to be submitted via Lisam.

- Monday 10th January, 12:00: Opposition schedule will be available on Lisam.

- Thursday 13th January,13:15-17:00: Opposition seminar to take place.

- By Friday 14th January, 17:00: Revised reports to be submitted vis Lisam.

PLAGIARISM

Plagiarism is not allowed. See the following website for details of LiUs policy on plagiarism (including definitions), and for links to other useful resources:
https://liu.se/en/article/plagiering-upphovsratt

Written assignments will be analysed for possible plagiarism using the web-based service 'Urkund'.

COURSE EVALUATION

The course will be evaluated via an EvaLiUate form, which will be sent out at the end of the course. Your opinions are important, so please remember to fill it in! If you have any questions or suggested improvements during the course, please contact Rachel. A mid-course evaluation will be held on 2nd December – this will be based on discussion points that you raise.

PRACTICAL INFORMATION

Questions can be discussed using the discussion board on Lisam ("diskussionsforum"). Please start a new thread for each question. Rachel will check twice a week (on Tuesday and Thursday) and will answer any remaining questions.

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Examiner:	Rachel Ellis
Course administrator:	Carl Löfstrand, carl.lofstrand@liu.se,
	tel: 013-28 47 75
Program administrator:	Anna Grabska Eklund, anna.grabska.eklund@liu.se,
	tel: 013-282362

LITERATURE

Kjellberg, Anders, Sörqvist, Patrik, (2015) *Experimentell metodik för beteendevetare 2*., [utök. och rev.] uppl. Lund : Studentlitteratur, 2015
ISBN: 9789144109039

Borg, E & Westerlund, J (2012) Statistik för beteendevetare : faktabok (tredje uppl.). Liber, Stockholm.
ISBN: 978-47-09737-1

OR

Field, Andy, (2017) Discovering statistics using IBM SPSS statistics 5. ed. (4th edition also ok) Los Angeles: London: Sage, ISBN: 9781526419521, 9781526419514, 9781526422989