FORSKARUTBILDNINGSKURSER VID MEDICINSKA FAKULTETEN UMEÅ UNIVERSITET

Vårterminen 2023

Deadline för ansökan: 29 november 2022

Obligatoriska kurser för doktorander som deltar i fakultetens forskarutbildningsprogram annonseras i särskild ordning!

Innehåll

A practical introduction to biobank research, 3.5 ETCS (online)

En praktisk introduktion till biobanksforskning, 3,5 hp (online)

Course directors	Maria Wennberg, Stina Bodén, Lena Maria Nilsson
Course ddministrator	Maria Wennberg, Department of Public Health and Clinical Medicine, Section of Sustainable Health Email: maria.wennberg@umu.se
Date	Mandatory seminars on-site in Umeå 29 March and 31 May 2023
Number of participants	15
Form of teaching	Online lectures 15 hours, Online Seminars 15 hours, Examination task 63 hours
Knowledge test	Presenting a proposal for withdrawal of biobank data and samples according to the routines of the NSHDS cohort. Giving feedback on another student's proposal.

Contents of the course

A large proportion of research carried out utilizes research cohorts including biobank samples and survey data combined with other register data. To use already collected cohort data or stored biological samples for research purposes requires planning and preparing the project, and other kinds of practical and methodological considerations. This course will guide you through some of these issues, with examples from the Northern Sweden Health and Disease Study cohort (NSHDS) and refined NSDHS data from the Northern Sweden Diet Database (NSDD). The aim with this course is to give practical knowledge on how to plan and perform observational studies in the NSHDS framework. The knowledge may also be applied on other similar cohorts. In brief, students who successfully complete this course will be able to (1) Overview available data in NSHDS cohort including NSDD. (2) Describe the process and time required for the data application and acquisition. (3) Describe the feasibility and limitations of already collected cohort data for research purposes. (4) Describe pros and cons of the designs nested case-control and cohort studies. (5) Handle missing data. (6) Handle temporal changes in data collection. (7) Handle data on nutrition from NSDD as a main or secondary exposure, including nutritional biomarkers. (8) Handle biological measures. (9) Consider and handle ethical issues including orientation of GDPR. (10) Use knowledge obtained in this course in order to write applications based on samples and/or data from the NSHDS cohort or other similar cohorts.

Minimal required prior knowledge: "Research ethics, 3 ECTS" and "Introductory course to doctoral studies: research methodology and philosophy of science, 3 ECTS"

Analyzing data in qualitative research, part 2 (online), 4.5 ECTS

Analys av data i kvalitativ forskning, del 2 (online), 4,5 hp

Course director	Ida Linander Phone: +46 90 786 95 21 Email: ida.linander@umu.se
Course administrator	Ulrika Järvholm Phone: +46 90 786 71 43 Email: ulrika.jarvholm@umu.se
Department	Department of Epidemiology and Global Health
Date	Activities 24 April – 2 June (Canvas opens 17 April)
Language	English
Number of participants	15
Form of teaching	Lectures (online) 20 hours Seminars (online) 10 hours
Knowledge test	Home examination

Contents of the course

The course focuses on the analysis and writing process of qualitative research, focusing on the final stages of developing themes from codes and writing results. The course emphasizes thematic analysis, but also provides an overview of other approaches such as content analysis and grounded theory. The course provides hands-on training into qualitative data analysis, using qualitative data brought by the students. The course also attends to the assessment of quality criteria in qualitative research and on writing and disseminating qualitative research findings. The course also introduced theoretical/conceptual frameworks as a way to advance qualitative analysis. During the course the doctoral students are working with their own qualitative material.

An introduction to multilevel analysis: An epidemiological approach (online), 3 ECTS

En introduktion till flernivåanalys: Ett epidemiologiskt perspektiv, 3 hp

Course director	Masoud Vaezghasemi Phone: +46 90 786 77 30 Email: masoud.vaezghasemi@umu.se	
Course administrator	Ulrika Järvholm Phone: +46 90 786 71 43 Email: ulrika.jarvholm@umu.se	
Department	Department of Epidemiology and Global Health	
Date	27 February – 7 April 2023	
Language	English	
Number of participants	20	
Form of teaching	Lectures Practical training Seminars	18 hours 12 hours
Examination	Home exam	

Course content

This course is designed as an intensive, hands-on learning experience that will foster the development of basic skills in multilevel analysis with a focus on fundamental epidemiological concepts and interpretations rather than statistical or mathematical formulae. It starts with a description of why multilevel models are necessary if the data have a hierarchical structure. It then covers the basic theory of two-level models (intercept and random slopes) with emphasis on modelling strategies. Next it explains how multilevel models can be applied to analyse data when the outcome is continuous (linear regression) and when the outcome is dichotomous (logistic regression). Further topics include defining area-level variables and sample size calculation.

Grundkurs i Good Clinical Practice (GCP) i kliniskt forsknings-arbete, 4,5 hp

Basic Good Clinical Practice pertaining to clinical research, 4.5 ECTS

Kursansvarig	Marcus Lind Epost: marcus.lind@regionvasterbotten.se	
Kursadministratör	Elin Lindahl Telefon: +46 90 785 26 52 Epost: elin.lindahl@umu.se	
Institution	Institutionen för folkhälsa och klinisk medicin	
Datum	27 – 28 februari (via Zoom) samt 3 – 4 maj (på plats i Umeå).	
Språk	Svenska	
Antal deltagare	25	
Undervisningsform	Föreläsningar Seminarier	20 timmar 12 timmar
Examinationsform	Skriftlig hemuppgift (instruktion ges vid tillfälle 1), redovisning i grupper i seminarieform (under tillfälle 2)	

Kursens innehåll

I kursen ges den studerande grundläggande kunskap om gällande regelverk vid klinisk forskning: Good Clinical Practice (GCP). Vidare ges en orienterande information om de lagar och förordningar som reglerar medicinsk forskning liksom etisk och statistisk värdering av ett forskningsprojekt. Kursen ger kunskap i hur ett studieprotokoll ska vara skrivet samt hur data samlas in och dokumenteras i strukturerad form. Analys av begrepp och regelverk i relation till det egna forskningsområdet fokuseras under kursen och i grupparbeten.

Informationssökning, referenshantering och publicering, 1,5 hp

Information retrieval, reference management and publication, 1.5 ECTS

Kursansvarig	Mattias Lennartsson Telefon +46 90 786 52 36 E-post:mattias.lennartsson@umu.se
Enhet	Medicinska biblioteket
Datum	Grupp 1: 14 – 15 mars Group 2: 21 – 22 mars
Språk	Svenska (Group 2 in English if there are any foreign participants)
Antal deltagare	36
Undervisningsform	Föreläsningar 16 timmar
Examinationsform	Hemtentamen/Exam questions

Kursens innehåll

Informationssökning, referenshantering och publicering

Kursen ger en fördjupad översikt av metoder och källor för informationssökning. Kursens tonvikt ligger på sökstrategier för informationssökning inom medicin och hälsa. Sökning sker i referens- och citeringsdatabaser samt databaser inom evidensbaserad medicin. För referenshantering ingår en genomgång av programmet EndNote. Den strategiska publiceringens roll för genomslag och synlighet ingår, samt publicering med open access. Inkluderad är även information om processer som rör manuskript, peer review, redaktionell beslutsgång och produktion.

Information retrieval, reference management and publication

The aim of this course is to learn different methods in information retrieval. The course gives knowledge about designing search strategies for literature search in medicine and health. Searches are conducted in reference- and citation databases as well as databases in evidence based medicine. Training for reference management in the software EndNote is included. The course includes how the medical publication system works, both through ordinary journals and through open access. Included are processes surrounding manuscript submission, peer review, editorial decision making, and production.

Introduction to molecular epidemiology, 1.5 ETCS
Introduktion till molekylär epidemiologi, 1,5 hp

Course director	Sophia Harlid, Anna Dahlin, Wendy Wu
Course administrator	Sophia Harlid Phone: +46 90 785 28 45 E-mail: sophia.harlid@umu.se
Department	Department of Radiation Sciences
Date	8 – 12 May
Number of participants	30
Form of teaching	Lectures 10 hours Group work/discussion 6 hours
Examination	Active participation in group discussions and oral presentation

Course content

Molecular Epidemiology is becoming increasingly important, both in academia and industry, and is, for example, an invaluable tool in the quickly progressing field of personalized medicine. With focus on different biological measurement approaches and epidemiological study designs, this course gives an introduction to how molecular and epidemiological methods can be used to understand biological processes and infer disease mechanisms. The course also describes how molecular epidemiology can be used for biomarker discovery and follow-up. Different 'Omics' technologies (e.g. genomics, epigenetics and proteomics) will be covered as part of the course.

The course will include group discussions e.g. about ethical considerations regarding use of human samples and sensitive data as well as a mandatory group work where participants design a hypothetical study.

Introductory course to doctoral studies: Research methodology and philosophy of science, 3 ECTS

Introduktionskurs till forskarstudier: Vetenskapsteori, kunskapsteori och forskningsmetoder, 3 hp

Please note! Compulsory for all doctoral students admitted before July 1, 2021

Course director	Per Gustafsson Phone: +46 90 786 95 63 Email: per.e.gustafsson@umu.se
Course administrator	Ulrika Järvholm Phone: +46 90 786 71 43 Email: ulrika.jarvholm@umu.se
Department	Department of Epidemiology and Global Health
Date	Week: 7 + 8 (13 – 24 February)
Language	English
Number of participants	30
Form of teaching	Lectures 10 hours Group exercise 15 hours Individual tasks 10 hours
Examination	In-class presentation of group work Submission of individual tasks

Course content

This course is an introduction to philosophy of science and common concepts and theories used in research, corresponding to national goals. The course gives an overview of different methods and scientific approaches used at the Medical Faculty. Using the diversity of scientific approaches as point of departure, lectures on philosophy of science will give different perspectives of knowledge in medical research. Generic knowledge, research as part of society and how to communicate research will be in focus. Gender, equality and the importance of research in society will be discussed.

The educational format is a mixture of plenary lectures, a heavy emphasis of group and in-class discussion, participant's own presentations and two assignments to work with in two steps, individually before and in groups during the course.

Qualitative content analysis, 4.5 ECTS
Kvalitativ innehållsanalys, 4,5 hp

Course director	Ulla Hällgren Graneheim Phone: +46 90 786 92 58 Email: ulla.hallgren.graneheim@umu.se Britt-Marie Lindgren Phone: +46 90 786 92 61 Email: britt-marie.lindgren@umu.se
Course administrator	Birgitta Nilsson Phone: +46 90 786 77 18 Email: birgitta.nilsson@umu.se
Department	Department of Nursing
Date	8 – 10 February and 20 – 21 April
Language	English
Number of participants	20
Form of teaching	Lectures 10 hours Hands-on exercise 8 hours Examination seminars 10 hours
Examination	Written assignment

Course content

This course focus on qualitative content analysis and covers the method's epistemological base, basic concepts and steps in the analysis process, and provides hands-on exercise of the method. Further we discuss concepts of importance for trustworthiness. Examples on various data (e.g. texts, pictures, video recordings) are discussed. Participants are welcome to use their own data in the course.

Research ethics, 3 ECTS, (online)
Etik i forskningen, 3 hp

Please note! Compulsory for all doctoral students admitted before July 1, 2021

Course director	Klas-Göran Sahlén Phone: +46 90 786 63 58 Email: klas-goran.sahlen@umu.se
Course administrator	Ulrika Järvholm Phone: +46 90 786 71 43 Email: ulrika.jarvholm@umu.se
Department	Department of Epidemiology and Global Health
Date	30 January - 3 February 2023
Number of participants	30
Form of teaching	Online Lectures 20 hours Online Seminars 10 hours
Knowledge test	Home exam

Contents of the course

Basic concepts and history of research ethics. Ethical reflections on different kind of data. Application to ethical review board. Research on groups with limited autonomy. Misconduct in research. Publication ethics. Archives, openness and secrecy for research data. Data management plan. Introduction to ethics in animal research. Discussion on students' own project.

Research methodology with biostatistics, 7.5 ECTS
Forskningsmetodik med grundläggande statistik, 7,5 hp

Course director	Henrik Holmberg Phone: +46 90 786 66 59 Email: henrik.holmberg@umu.se
Course administrator	Ulrika Järvholm Phone: +46 90 786 71 43 Email: ulrika.jarvholm@umu.se
Department	Department of Epidemiology and Global Health
Date	Course week 1: 27 February – 3 March Course week 2: 27 March – 30 March
Language	English
Number of participants	35
Form of teaching	Lectures 32 hours Practical exercises 16 hours
Examination	Home exam

Course content

The course is an introduction to epidemiology and biostatistics. Basic epidemiological and statistical concepts are covered, and issues of study design and validity are discussed. In biostatistics, lectures focus on sampling, descriptions of data and common tools for data analysis. Practical exercises are also included.

Writing science: How to write and publish scientific papers, 5 ECTS

Vetenskapligt skrivande: Att skriva och publicera vetenskapliga artiklar, 5 hp

Course director	Martin Rosvall Phone: +46 70 239 19 73 Email: martin.rosvall@umu.se Ryan Sponseller Phone: +46 90 786 65 50 Email: ryan.sponseller@umu.se
Course administrators	Frankie Ekerholm Phone: +46 90 786 74 38 Email: frankie.ekerholm@umu.se
Department	Faculty of science and technology
Date	17, 24, 31 March and 14, 21, 28 April
Language	English
Number of participants	30
Form of teaching	Lectures Writing group discussions and exercises Concluding classroom discussions
Examination	Mandatory attendance. Writing/editing/reviewing exercise for each meeting that builds on the same short article. Analysis and peer review of a set of published papers.

Course content

This is an advanced course in scientific writing. To succeed as a scientist the ability to write scientific papers is a central and very important skill. The aim of the course is that students should acquire tools and learn the craft to become skilled scientific writers. It includes the three components of effective communication: content, structure and language. We present the purpose and significance of the major general structure of a scientific paper. Here we highlight why an article must contain the topic of the research, a knowledge gap, a clear research question, a description of methods, results, discussion and conclusions. We present different narrative techniques and analyse how they can be used for better flow and continuity within and between sections. We develop writing skills down to the detailed level of internal structures of paragraphs and sentences.

We meet once a week for six weeks. Each meeting starts with a short lecture focused on scientific writing in practice and based on experience with, for example, journals and editors. Then we make a short introduction to the writing exercise and split into

small writing groups of three students. Each student has prepared a text, or revised the text according to the specific exercise, and the other students in the group have commented on the result. Together the students analyze, discuss, and revise the texts to further improve them. The exercises derive from the book Writing Science, which from chapter to chapter provides new tools to better tell the story. Each week, we cover three chapters and the corresponding exercises. Finally we reunite, summarize, conclude, and present the exercise for the next meeting.