

FORSKARUTBILDNINGSKURSER  
ATT SÖKA VID MEDICINSKA  
FAKULTETEN,  
UMEÅ UNIVERSITET,  
HÖSTTERMINEN 2024

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## **Design of intervention studies within patient-based research, 3 ECTS (online)**

Design av interventionsstudier inom patientnära forskning, 3 hp (online)

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<b>Course administrator</b>	Johanna Frank Phone: +46 90 786 93 45 Email: johanna.frank@umu.se
<b>Department</b>	Department of Community Medicine and Rehabilitation
<b>Date</b>	16 – 18 October and 27 – 28 November Online (or at Campus, if only students living in Umeå)
<b>Language</b>	English (or Swedish, if only Swedish-speaking students)
<b>Number of participants</b>	16
<b>Form of teaching</b>	Lectures (online) 12 hours Seminars/Workshops (online) 20 hours Assignment 40 hours
<b>Examination</b>	Written assignment about study design relevant to own research project, and active participation in workshops and seminars.

### **Content**

The course includes theoretical and practical aspects of planning, conducting and evaluating randomized controlled trials, as well as studies with other designs aiming at evaluating interventions within patient-based research. The course gives an overview of criteria and guidelines on how studies should be conducted and reported in papers to achieve high quality, as well as the use of rating scales to assess the quality. The course will also give an insight into Patient and Public Involvement and the concept Complex Interventions. During the course, the student will judge advantages and disadvantages with various designs based on own ongoing or planned study within patient-based research.

## Equity and health, 3.5 ECTS

Den jämlika hälsan, 3,5 hp

### Course directors

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### Course administrator

Carina Luther  
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### Department

Department of Epidemiology and Global Health

### Date

18 September – 1 October

### Language

English

### Number of participants

20

### Form of teaching

Lectures 20 hours  
Seminars 8 hours  
Group-discussions  
Home assignments  
(Seminars, group-discussions and home assignments are mandatory)

### Examination

Written assignment

### Content

Inequities in health have got more and more attention, both in the national and global agendas. However, there are different opinions both regarding the definition of equity, and regarding which policies that are appropriate and justified to increase equity. This course introduces the theories which so far have been most influential in health care and public health – utilitarianism, Rawl's theory of justice, fair procedures, communitarianism and feminism. The course investigates how these theories have influenced both research and policy-making.

## Evidence based public health, 4 ECTS

Evidensbaserat folkhälsoarbete, 4 hp

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<b>Department</b>	Department of Epidemiology and Global Health
<b>Date</b>	2 September – 17 September
<b>Language</b>	English
<b>Number of participants</b>	20
<b>Form of teaching</b>	Lectures 30 hours Seminars 10 hours
<b>Examination</b>	Written exam

### Content

It is desirable to found public health policies on best possible evidence. Almost no potential policy can meet the conditions necessary for randomized control trials. On the other hand, too low evaluation standards can imply that ineffective or even harmful policies are implemented. Research aimed at a foundation for policy-making further requires an understanding of the decision-making process in public organizations. Decision-makers have to balance more or less legitimate interest of different stakeholders, and even make decisions when the evidence is far from perfect. They commonly act under economic and legitimate constraints, such as respect for human rights. Frameworks for compiling available evidence from different sources such as realistic synthesis and Markov-modelling will be presented and discussed. Most of the practical experience of compiling different aspects of health technologies can be found in the health technology assessment literature. Concrete and timely examples will be studied.

## **Gender-based violence, health, and healthcare, 5 ECTS, (online)**

Genusbaserat våld, hälsa och sjukvård, 5 hp

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<b>Department</b>	Department of Epidemiology and Global Health
<b>Date</b>	9 September – 15 December
<b>Number of participants</b>	7
<b>Form of teaching</b>	Lectures 15 hours Seminars 3 hours Compulsory group meetings 3 hours
<b>Examination</b>	Participation in compulsory meetings, final written assignment

### **Content**

The course aims to provide an overview of gender-based violence from both an international and national perspective, focusing on the relationship between gender-based violence and health, and the role of the healthcare system in responding to gender-based violence. The course is structured in four parts, each of them including lectures and a seminar/panel discussion. The first and second parts focus on the extent of the problem of gender-based violence, its connection with health, theoretical explanations and definitions and the evolution of institutional responses to gender-based violence. The third part focuses on the healthcare responses to gender-based violence, both from an international and national perspective, including a critical analysis of the consequences of the (bio)medicalization of gender-based violence. The fourth part examines gender-based violence in relation to different groups. Here, issues regarding e.g. functional variation, age, sexuality and racialization are examined.

## **Grundläggande forskningsmetodik för kliniska doktorander, 15 hp**

Basic Research Methodology for Doctoral Students in Clinical Research,  
15 ETCS

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<b>Institution</b>	Institutionen för folkhälsa och klinisk medicin
<b>Datum</b>	Augusti 2024 - maj 2025
<b>Språk</b>	Svenska
<b>Antal deltagare</b>	20
<b>Undervisningsform</b>	Föreläsningar, gruppövningar, praktiska datorövningar, seminarier och eget arbete
<b>Examination</b>	Individuell hemtentamen

### **Innehåll**

Kursens innehåll avser att ge grundläggande kunskaper och färdigheter inom ämnena epidemiologi, biostatistik och kvalitativa forskningsmetoder. Inom kursen går vi igenom grundläggande begrepp, steg i analysprocessen och forsknings trovärdighet. Teori varvas med praktiska övningar och studenterna är välkomna att använda sitt eget data. Inom kursen ges också Good Clinical Practice (GCP 4,5 hp) samt introduktion till olika vanliga metoder relaterade till klinisk forskning.

## Intervjuer och observationer som kvalitativa datainsamlingsmetoder, 3 hp

Interviews and observations as qualitative data collection methods, 3 ECTS

### Kursansvarig

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### Kursadministratör

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### Institution

Institutionen för omvårdnad

### Datum

16 – 18 september och 21 – 22 november

### Språk

Svenska

### Antal deltagare

20

### Undervisningsform

Lektioner	10 timmar
Obligatoriska praktiska övningar	8 timmar
Examinationsseminarium	10 timmar

### Examinationsform

Skriftlig uppgift

### Innehåll

Kursen omfattar olika typer av intervjuer och observationer i relation till forskningsfrågan. Ostrukturerade och semistrukturerade intervjuer, narrativa intervjuer samt fokusgruppsintervjuer belyses. Vidare berörs strukturerade och ostrukturerade observationsmetoder. Kursen innehåller praktiska moment där kursdeltagarna övar och kritiskt granskar sin egen och andras förmåga att genomföra intervjuer och observationer. Kursen kommer också att beröra praktiska och etiska frågeställningar relaterat till intervjuer/observationer som kvalitativa datainsamlingsmetoder.



# Introduction to Advanced Therapy Medicinal Products (ATMPs), 1.5 ECTS

Introduktion till läkemedel för avancerad terapi (ATMPs), 1,5 hp

<b>Course director</b>	Paul Kingham Phone: +46 90 786 9754 Email: paul.kingham@umu.se
<b>Department</b>	Department of Medical and Translational Biology
<b>Date</b>	Week 47: Online lectures and online group work Week 48: Conference and examination*
<b>Language</b>	English
<b>Form of teaching</b>	Online lectures Online group work
<b>Examination</b>	Oral presentation of the student's research project in relation to the course content & group seminars of case studies

## Content

The course will provide an introductory overview of advanced therapy medicinal products (ATMPs) from bench to bedside. The students will start by gaining a basic understanding of the cellular and molecular science that underpins ATMPs. The students will be introduced to the pre-clinical requirements of ATMP development enabling translation of basic research to the clinic including in vitro and in vivo assays, and adaptation to good manufacturing practice (GMP). An overview of the regulatory framework and different ATMP classifications will be given together with examples of products in each category. Manufacturing models and challenges for commercialization and reimbursement will be introduced. Finally, the students will gain a basic understanding of the clinical trials application process and the complexities and challenges of clinical delivery of an ATMP.

Each module: 1) scientific, 2) development & manufacturing, 3) regulatory and 4) clinical trials and delivery will provide a basic introduction to deeper study provided by other courses within the National ATMP Research School.

\* Note: This course is compulsory for co-funded students admitted to the National ATMP Research School and attendance at the annual ATMP Sweden conference Malmö, 25-26<sup>th</sup> November 2024 is compulsory, during which time the student is expected to present their research project.

## **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 at the Medical Faculty, Umeå University, admitted before 1 July, 2021. The course is only available for those doctoral students.*

*Students admitted as of 1 July 2021 take Introductory course to doctoral studies: Joint perspectives on theory, methodology and practice in medical science, 4 ECTS, which is included in the faculty-wide programme.*

### **Course director**

Åsa Audulv

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### **Course administrator**

Anna Gåfväls Karlsson

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### **Date**

Week: 39 + 40 (23 September - 4 October)

### **Language**

English

### **Form of teaching**

Lectures

Group exercise

Individual tasks

### **Examination**

In-class presentation of group work

Submission of individual tasks

### **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.

## **Introduktion till registerforskning, 1,5 hp** Introduction to register-based research, 1,5 ECTS

<b>Kursansvarig</b>	Christel Häggström Telefon: +46 90 785 72 80 Epost: christel.haggstrom@umu.se
<b>Kursadministratör</b>	Carina Luther Telefon: +46 90 786 72 31 Epost: carina.luther@umu.se
<b>Institution</b>	Institutionen för epidemiologi och global hälsa
<b>Datum</b>	4 – 8 november
<b>Språk</b>	Svenska
<b>Antal deltagare</b>	20
<b>Undervisningsform</b>	Föreläsningar           18 timmar Seminarier               12 timmar Praktiska exempel       8 timmar
<b>Examinationsform</b>	Att medverka i och klara av praktiska övningar på seminarier

### **Innehåll**

Detta är en introduktionskurs i registerforskning. Kursen avser att ge generell teoretisk kunskap om och grundläggande praktiska färdigheter för forskning på kvalitetsregister.

## Longitudinal data analysis, 1.5 ECTS

Longitudinell analys, 1,5 hp

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<b>Course administrator</b>	Ulrika Järholm Phone: +46 90 786 71 43 Email: ulrika.jarholm@umu.se
<b>Department</b>	Department of Public Health and Clinical Medicine
<b>Date</b>	2 December – 5 December
<b>Language</b>	English
<b>Number of participants</b>	20
<b>Form of teaching</b>	Lectures                      12 hours Data exercise                9 hours
<b>Examination</b>	Practical assignment

### Content

The course deals with statistical analysis in studies with repeated or time dependent outcomes.

- Introduction to longitudinal data and longitudinal study designs
- Characteristics and description of longitudinal data
- Introduction to Mixed models with random and fixed effects for longitudinal analysis
- Introduction to General Estimation Equation models
- Covariance structures and their implementation within longitudinal analysis
- Model fitting in longitudinal analysis

The course is given in form of lectures, seminars, and practical computer exercises.

*The course is intended for students with practical and theoretical knowledge of biostatistics corresponding to the course Research methodology with biostatistics, 7.5 ECTS (see page 18).*

## Methods in social epidemiology, 3 ECTS

Metoder inom social epidemiologi, 3 hp

<b>Course director</b>	Miguel San Sebastián Phone: +46 90 786 51 50 Email: miguel.san.sebastian@umu.se
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<b>Department</b>	Department of Epidemiology and Global Health
<b>Date</b>	16 – 20 December
<b>Language</b>	English
<b>Number of participants</b>	5 at PhD-level
<b>Form of teaching</b>	Lectures 18 hours Practical training 12 hours Seminars

Lectures will be held in the mornings and computer sessions with applied exercises will follow in the afternoon after each lecture session. Hands-on practical session in the computer labs will use Stata software. *Previous knowledge of Stata is required.*

**Examination** Home exam

### Content

Socioeconomic inequalities in health are a major challenge for health policy. Monitoring the changes in the magnitude of these inequalities is essential to assess the effectiveness of health policy interventions. There is a wide variety of summary measures for the magnitude of socioeconomic inequalities in health. These measures choose different perspectives, and it is recommended to assess the magnitude of health inequalities based on a set of diverse measures that together cover all the relevant perspectives. Both simple and sophisticated summary measures are available for each of these perspectives.

This course is designed as an intensive, hands-on learning experience that will foster the development of theoretical knowledge and basic skills in calculating and interpreting different health inequality measurements. The different measurements included in the course are: the relative index of inequality and the concentration index, the principal component analysis applied to socioeconomic status, the measurement of intersectionality, how to conduct a decomposition analysis and propensity matching score. Further topic includes methodological issues when carrying out life course studies and the advantages of multilevel analysis.

*Previous knowledge on biostatistics and epidemiology are pre-requisite for taking this course.*

## **Expected learning outcomes**

Students who successfully complete this course will be able to:

- Differentiate various measures of health inequalities and judge their weaknesses and strengths.
- Understand the theoretical concepts behind the health inequality measurements.
- Calculate the measures of health inequalities presented in the course.
- Interpret the results of the health inequality measurements.

## **Omvårdnadens teori och begrepp i relation till forskning och klinisk praxis, 4,5 hp (online)**

Nursing theory and concepts in relation to research and clinical practice, 4.5 ECTS (online)

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<b>Kursadministratör</b>	Birgitta Nilsson Telefon: +46 90 786 77 18 Epost: birgitta.nilsson@umu.se
<b>Institution</b>	Institutionen för omvårdnad
<b>Datum</b>	17 september – 05 december
<b>Språk</b>	Svenska
<b>Antal deltagare</b>	20
<b>Undervisningsform</b>	Introduktion med föreläsningar 17-18 sep Litteraturseminarium 10 okt Idéseminarium 24 okt Examinationsseminarium 5 dec
<b>Examinationsform</b>	Individuella papers som diskuteras vid ett examinationsseminarium

### **Innehåll**

Kursen belyser omvårdnadsämnets utveckling och har fokus på omvårdnadens teori och begrepp. Den modell för omvårdnad, som används och har utvecklats successivt vid Institutionen för omvårdnad, Umeå universitet, fungerar som utgångspunkt för kursen. De olika aspekterna i modellen utgörs av patient/närstående och vårdare/vårdteamet, uppgift och relation, hälsa, miljö, organisation, samhälle, vårdfilosofi och etik. Modellen fungerar som stöd i att systematisera och beskriva omvårdnad, i såväl teori, forskning som klinisk praxis. Utifrån den egna forskningsinriktningen är målet sedan att fördjupa förståelsen för relevanta teorier/begrepp och reflektera över dess betydelse för klinisk praxis.

Kursen bygger huvudsakligen på självstudier och är helt nätburen. Obligatoriska seminarier inklusive diskussioner och slutexamination i form av opponent- och respondentskap ingår och genomförs digitalt.

## Qualitative data analysis, 7.5 ECTS

Kvalitativ dataanalys, 7,5 hp

### Course director

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### Course administrator

Carina Luther  
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### Department

Department of Epidemiology and Global Health

### Date

2 October – 31 October 2024

### Language

English

### Number of participants

10 at PhD-level

### Form of teaching

Lectures	22 hours
Seminars	12 hours
Group works	12 hours
Group supervision	5 hours

### Examination

Literature seminar, course project, individual paper and article analysis

### Content

The course focuses on the basic principles and steps of Qualitative Data Analyses using examples from mainly Grounded Theory method but also other methods. Participants will perform the basic steps of analyzing qualitative data (their own or of a teacher-provided). Moreover, participants will examine and discuss critically various examples of scientific studies that employ Grounded Theory method and other qualitative methods.



## Research ethics, 3 ECTS (online)

### Etik i forskningen, 3 hp (online)

*Please note! Compulsory for all doctoral students admitted before July 1, 2021. The course is only available for those doctoral students.*

*Students admitted as of 1 July 2021 take Research ethics, 2 ECTS (online), which is included in the faculty-wide programme.*

#### **Course director**

Anni-Maria Pulkki-Brännström

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#### **Department**

Department of Epidemiology and Global Health

#### **Date**

week 37

#### **Form of teaching**

Online lectures, seminars, group discussions

#### **Examination**

Individual home assignments

#### **Content of the course**

Basic research ethics concepts and the history of research ethics. Application to the Swedish ethical Review Authority. How to archive research data and process personal data according to GDPR. Data management plan. Ethics in preclinical research (including research using animals). Ethical reflections regarding different types of data. Ethical reflections regarding research in other cultures, among Sámi, and research on vulnerable groups. Research misconduct and publication ethics. Current research ethical dilemmas.

## **Research methodology with biostatistics, 7.5 ECTS**

Forskningsmetodik med grundläggande statistik, 7,5 hp

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<b>Department</b>	Department of Epidemiology and Global Health
<b>Date</b>	Course week 1: 2 – 6 September Course week 2: 23 – 26 September
<b>Language</b>	English
<b>Number of participants</b>	35
<b>Form of teaching</b>	Lectures                      32 hours Practical exercises        16 hours
<b>Examination</b>	Home exam
<b>Course content</b>	

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

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<b>Department</b>	Faculty of Science and Technology
<b>Date</b>	17/10, 24/10, 7/11, 14/11, 21/11, 28/11
<b>Language</b>	English
<b>Number of participants</b>	30
<b>Form of teaching</b>	Lectures Writing group discussions and exercises Concluding classroom discussions
<b>Examination</b>	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.