Kursplansdatabas för forskarutbildningskurser

HT19

Människans biologi eller sjukdomslära * Allmänvetenskapliga kurser
1391 Writing science and information literacy * 2019-11-04 -- 2019-11-15 (Engelska)
1626 Cytokines in inflammation 2019-11-25 -- 2019-12-06 (Engelska)
1974 Phenotyping of genetically engineered mice 2019-11-12 -- 2019-11-21 (Engelska)
2193 Introduction to Medical Education Research 2019-09-18 -- 2019-12-05 (Engelska)
2212 Human embryonic stem cells 2019-08-19 -- 2019-08-23 (Engelska)
2219 Bioinformatics for cell biologists * 2019-09-23 -- 2019-09-27 (Engelska)
2291 Clinical achievements of reproductive medicine 2019-09-02 -- 2019-09-06 (Engelska)
2348 Functional Fluorescence Microscopy Imaging (fFMI) in biomedical research 2019-11-18 -- 2019-11-29 (Engelska)
2407 Aktuell omvårdnadsvetenskap - teori och praxis 2019-10-04 -- 2019-11-15 (Svenska)
2433 Clinical Research in Lipid Metabolism 2019-10-21 -- 2019-10-25 (Engelska)
2454 Public Health Intervention and Implementation Research 2019-11-11 -- 2019-12-13 (Engelska)
2484 Thrombosis and Hemostasis, from mechanisms to therapies 2019-11-04 -- 2019-11-08 (Engelska)
2498 Obesity - basic science, clinical and epidemiological aspects 2019-11-18 -- 2019-11-22 (Engelska)
2522 Mass spectrometry-based proteomics: When and How. 2019-11-11 -- 2019-11-22 (Engelska)
2526 Neuropschopharmacology 2019-12-02 -- 2019-12-06 (Engelska)
2561 Writing science and information literacy * 2019-08-26 -- 2019-10-18 (Engelska)
2600 Neurogenetics 2019-10-07 -- 2019-10-11 (Engelska)
2601 Epigenetics and its Applications in Clinical Research 2019-10-21 -- 2019-10-25 (Engelska)
2609 Basic Course in Medical Statistics - a distance course * 2019-11-25 -- 2019-12-06 (Engelska)
2609 Basic Course in Medical Statistics - a distance course * 2019-09-30 -- 2019-10-11 (Engelska)
2616 Frontiers in Cogntive Neuroscience 2019-09-09 -- 2019-09-13 (Engelska)
2618 Write your research results and get them published * 2019-09-02 -- 2019-09-13 (Engelska)
2618 Write your research results and get them published * 2019-11-04 -- 2019-11-15 (Engelska)
2618 Write your research results and get them published * 2019-12-02 -- 2019-12-13 (Engelska)
2618 Write your research results and get them published * 2019-09-30 -- 2019-10-11 (Engelska)
2624 Brain circuits 2019-09-16 -- 2019-09-20 (Engelska)
2629 Neurodegenerative disorders I - From molecule to treatment 2019-09-30 -- 2019-10-04 (Engelska)
2644 Human physiology - an overview # 2019-09-23 -- 2019-10-04 (Engelska)
2674 Practical approaches to qualitative research - based on blended learning 2019-08-26 -- 2019-11-15 (Engelska)
2688 Multi-Disciplinary Perspectives on Active Ageing Research 2019-09-16 -- 2019-11-29 (Engelska)
2690 Basic Laboratory Safety * 2019-09-30 -- 2019-10-07 (Engelska)
2702 Occupational Science conceptual development and application on research 2019-09-30 -- 2019-11-22 (Engelska)
2738 Intermediate Medical Statistics: Regression models * 2019-11-11 -- 2019-11-22 (Engelska)
2780 The developing brain 2019-09-02 -- 2019-09-06 (Engelska)
2787 Present your research! * 2019-11-25 -- 2019-11-29 (Engelska)
2787 Present your research! * 2019-08-26 -- 2019-08-30 (Engelska)
2787 Present your research! * 2019-10-28 -- 2019-11-01 (Engelska)
2787 Present your research! * 2019-12-16 -- 2019-12-20 (Engelska)
2787 Present your research! * 2019-09-23 -- 2019-09-27 (Engelska)
2795 Novel methods and approaches in health risk assessment 2019-11-18 -- 2019-11-22 (Engelska)
2796 Introduction to Stata for epidemiologists 2019-09-11 -- 2019-09-12 (Engelska)
2797 Biostatistics II: Logistic regression for epidemiologists * 2019-09-16 -- 2019-09-27 (Engelska)
2827 Människans Fysiologi - en översikt # 2019-12-16 -- 2020-01-17 (Svenska)
2868 Advanced course in SAS programming for health care data 2019-12-02 -- 2019-12-06 (Engelska)
2873 Kvalitetssäkring av klinisk forskning * 2019-09-09 -- 2019-09-13 (Svenska)
2873 Quality assurance of clinical research * 2019-09-23 -- 2019-09-27 (Engelska)
2953 Statistics with R - from data to publication figure 2019-10-21 -- 2019-11-08 (Engelska)
2957 Neural Control of Inflammation: An introduction to Bioelectronic Medicine 2019-10-07 -- 2019-10-11 (Engelska)
2964 Medicinsk forskningsetik * 2019-09-09 -- 2019-09-13 (Svenska)
2964 Medical research ethics * 2019-12-02 -- 2019-12-06 (Engelska)
2964 Medical research ethics * 2019-10-07 -- 2019-10-11 (Engelska)
2964 Medical research ethics * 2019-11-04 -- 2019-11-08 (Engelska)
2971 Introduction to R - data management, analysis and graphical presentation 2019-09-25 -- 2019-10-28 (Engelska)
2972 Basic pharmacoepidemiology in a global context 2019-11-18 -- 2019-11-29 (Engelska)
2973 Fluorescence microscopy: High content image acquisition and analysis 2019-09-09 -- 2019-09-20 (Engelska)
2980 Study design in clinical research 2019-11-04 -- 2019-11-22 (Engelska)
2981 Rare Disease Genomics 2019-11-25 -- 2019-11-29 (Engelska)
2987 Preclinical Imaging Techniques 2019-11-11 -- 2019-11-15 (Engelska)
2990 Multivariate prediction modelling with applications in precision medicine 2019-11-25 -- 2019-11-29 (Engelska)
2991 Extensions to the design and analysis of case-control studies 2019-10-23 -- 2019-10-31 (Engelska)
2992 Biostatistics III: Survival analysis for epidemiologists * 2019-11-11 -- 2019-11-20 (Engelska)
2994 Functional Neuroanatomy 2019-09-23 -- 2019-09-27 (Engelska)

2996 Anaesthesia, analgesia and surgery (mice and rats) 2019-12-02 -- 2019-12-06 (Engelska)
3024 Advanced cancer biology 2019-08-27 -- 2019-12-17 (Engelska)
3026 Cell cycle, cancer and anti-cancer targets 2019-09-30 -- 2019-10-04 (Engelska)
3028 Grundkurs i SPSS 2019-10-14 -- 2019-10-18 (Svenska)
3030 Human Papilloma Virus - from molecular biology to global health - an eLearning course 2019-09-09 -- 2019-10-18 (Engelska)
3037 Exploring entrepreneurial opportunities in research 2019-09-09 -- 2019-11-01 (Engelska)
3041 Epidemiology I: Introduction to epidemiology 2019-10-07 -- 2019-10-16 (Engelska)
3060 Regenerative Medicine: Principles to Practice 2019-09-25 -- 2019-12-11 (Engelska)
3066 Metoder för systematisk litteraturöversikt 2019-09-23 -- 2019-12-13 (Svenska)
3073 Philosophy of science and the concept of health * 2019-11-11 -- 2019-11-24 (Engelska)
3074 Behavioral phenotyping and cognitive studies in rodents 2019-10-21 -- 2019-10-25 (Engelska)
3080 Gene Regulation in the Early Human Embryo 2019-09-16 -- 2019-09-20 (Engelska)
3081 Medical developmental biology 2019-08-19 -- 2019-09-06 (Engelska)
3089 Cryobiology in assisted reproductive technology 2019-11-25 -- 2019-11-29 (Engelska)
3102 Omics data analysis: From quantitative data to biological information 2019-10-07 -- 2019-10-18 (Engelska)
3109 Pathology # 2019-10-14 -- 2019-10-25 (Engelska)
3110 Tumor immunology and immune therapy of cancer 2019-11-18 -- 2019-11-22 (Engelska)
3112 Basic course in tumor biology and oncology 2019-09-02 -- 2019-09-13 (Engelska)
3114 Molecular Immunology 2019-10-28 -- 2019-11-08 (Engelska)
3118 Forskningsetik * 2019-09-24 -- 2019-10-15 (Svenska)
3120 Flow cytometry: from theory to application 2019-09-23 -- 2019-09-27 (Engelska)
3121 Experimental techniques in study of metabolic and endocrine disorders 2019-11-25 -- 2019-11-29 (Engelska)
3127 Human Cell Culture. Methods and Applications 2019-11-11 -- 2019-11-15 (Engelska)
3132 Cardiovascular epidemiology 2019-11-18 -- 2019-11-22 (Engelska)
3134 Basic Course in Medical Statistics * 2019-10-14 -- 2019-10-25 (Engelska)
3138 Epidemiology II. Design of epidemiological studies 2019-12-09 -- 2019-12-18 (Engelska)
3147 To communicate science in different contexts with focus on oral and visual communication * 2019-10-14 -- 2019-10-29 (Engelska)
3150 Embryology I 2019-10-14 -- 2019-10-18 (Engelska)
3154 Biostatistics I: Introduction for epidemiologists * 2019-10-28 -- 2019-11-21 (Engelska)
3157 Mechanisms of Gene Regulation in Metabolism 2019-09-30 -- 2019-10-04 (Engelska)
3158 Cellular and molecular infection biology 2019-11-25 -- 2019-12-06 (Engelska)
3171 Summer School in Big Data in Healthcare 2019-07-08 -- 2019-07-12 (Engelska)
3172 Genetic Engineering Techniques 2019-08-26 -- 2019-09-06 (Engelska)
3173 Clinical Trials in Cardiovascular Research 2019-12-05 -- 2019-12-11 (Engelska)
3174 Survey of Molecular Endocrinology 2019-10-07 -- 2019-10-18 (Engelska)
3175 Extracellular Vesicles: Progress Towards Diagnostics and Therapy 2019-10-07 -- 2019-10-11 (Engelska)
3176 Imaging in Neuroscience: With a Focus on Functional Magnetic Resonance Imaging Methodology 2019-11-20 -- 2019-12-06 (Engelska)
3178 Mucosal Immunology 2019-09-30 -- 2019-10-14 (Engelska)
3180 Bridging Science and Societal Needs Through Design Thinking 2019-09-02 -- 2020-01-19 (Engelska)
3181 Introduction to Teaching and Learning in Higher Education * 2019-09-24 -- 2019-10-24 (Engelska)
3182 Metoder för kvalitativ innehållsanalys 2019-10-01 -- 2019-11-27 (Svenska)
3184 The Vasculature in Health and Disease - Mechanisms, Models and Targets 2019-11-11 -- 2019-11-15 (Engelska)
3185 Core Concepts in Global Health and Global Burden of Disease 2019-09-16 -- 2019-12-09 (Engelska)
3186 Translational Molecular Imaging in Neurodegenerative Disorders 2019-10-14 -- 2019-10-25 (Engelska)
3187 Basic immunology 2019-09-02 -- 2019-09-26 (Engelska)
3188 Tumor Microenvironment 2019-11-04 -- 2019-11-08 (Engelska)
3189 Beyond Gene Expression: Epigenetics in the Cardiovascular System 2019-10-21 -- 2019-10-25 (Engelska)
3190 Nucleic Acid Chemistry and Therapy 2019-10-08 -- 2019-10-24 (Engelska)
3191 Sex and Gender Aspects of Clinical Cardio and Cerebrovascular Research 2019-11-11 -- 2019-11-15 (Engelska)
3192 Presentera och diskutera forskning med det omgivande samhället, med fokus på elever i låg- och mellanstadiet 2019-09-02 -- 2020-01-17 (Svenska)
3194 Basic Principles in Clinical and Translational Research 2019-10-14 -- 2019-10-18 (Engelska)
3195 Clinical Aspects of Cardiovascular Research 2019-10-14 -- 2019-10-18 (Engelska)
3196 Global Health Economics 2019-09-30 -- 2019-10-11 (Engelska)
3197 Basic Cardiovascular Pathology 2019-11-25 -- 2019-11-29 (Engelska)
3198 Melanoma - From Basic Science to Clinical Application 2019-10-07 -- 2019-10-11 (Engelska)
3199 Key Concepts and Principles for Design and Critical Interpretation of Nordic Register-Based Studies 2019-09-23 -- 2020-01-17 (Engelska)
3200 Clinical and experimental neuroimmunology 2019-10-14 -- 2019-10-18 (Engelska)
3201 Teaching and Learning in Higher Education: A Doctoral Course * 2019-09-16 -- 2019-12-13 (Engelska)
3202 Cell Death and Cancer 2019-11-25 -- 2019-11-29 (Engelska)

Title : Writing science and information literacy

Kursnummer : 1391
Antal högskolepoäng : 3.0
Datum : 2019-11-04 -- 2019-11-15
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Karolinska Institutet University Library
Särskild behörighet :
Kursens syfte : The aim of the course is to develop the medical scientific writing skills and information literacy of the participant.
Kursens lärandemål : After the course, you will be able to demonstrate: -understanding of how to write an original scientific article and submit it for publication. -the ability to write other types of texts required for a scientific career. -the ability to give, take and make use of constructive criticism. -the ability to search and manage the medical sciences literature in a structured way. -the ability to use resources which facilitate choosing a journal to publish your research. -the ability to describe aspects of post-publication evaluation and processing of the medical sciences literature.
Kursens innehåll : Basics of scientific writing, searching the literature, writing an original scientific paper, supporting the text, managing the literature, scientific writing in other contexts, choosing a journal, the publication process and evaluating published science.
Arbetsformer : This is a KI CAMPUS course (there is also an 100% online version with course code 2561) with face-to-face teaching including: individual writing and rewriting, lectures, working in pairs and groups, web-based teaching, demonstrations, computer exercises and individual study.
Examination : Writing an academic text and rewriting it based on peer and teacher feedback. There are also three assignments in which participants demonstrate development of their information literacy.
Obligatoriska moment : All scheduled teaching is compulsory (except where clearly stated otherwise). Absence can usually be compensated for by reading and individual work after consultation with course leaders.
Antal studenter : 20 - 22
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information :

Kursansvarig :
David Herron
Karolinska Institutet universitetsbibliotek
08-524 841 13
David.Herron@ki.se

Berzelius 7B

17177
Stockholm

Kontaktpersoner :
Katarina Amcoff
Karolinska Institutet universitetsbibliotek
08-524 840 47
katarina.amcoff@ki.se

Title : Cytokines in inflammation

Kursnummer : 1626
Antal högskolepoäng : 3.0
Datum : 2019-11-25 -- 2019-12-06
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Medicine, Solna
Särskild behörighet : Basic knowledge in immunology corresponding to course 2302 is required
Kursens syfte : The aim of the course is to provide an increased understanding of the function of cytokines in the context of a healthy immune system and in different disease contexts.
Kursens lärandemål : At the end of the course the participant should be able to: - select adequate experimental methods to analyse cytokines based on specific scientific questions. - understand the relevance of cytokines in the context of their research project. - compare and contrast the function of cytokines in different organs and different diseases. - explain how a disease can be treated with drugs targeting cytokines. - hypothesize future treatment of a disease, where the modification of a cytokine pattern is the target.
Kursens innehåll : Learning the function of cytokines in immunologic networks and the measurement of cytokine responses
Arbetsformer : The course is partly theoretical, partly practical, where lectures, research seminars and laboratory demonstrations are integrated. Time is also allocated for discussing lab results and the content of the lectures.
Examination : The participant has to: - actively participate in the discussions during the course and show that the learning outcomes of the course are reached by the end of the course - prepare a group presentation of a selected topic on the course's content and in the context of their own research project. The presentations will be evaluated by the course organisers. Every student will be assessed individually.
Obligatoriska moment : Practical sessions are compulsory, unless stated that they are not. Absence from compulsory practical sessions cannot be compensated for, but absence from one theoretical session can be compensated for in subsequent course sessions.
Antal studenter : 15 - 25
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : This is not a basic course of immunology. Location: KI campus Solna. Time: 09.00-16.00 all days. Course content includes lectures and research seminars from invited experts and KI experts, and local staff are also involved in practical work.
 The course is given jointly by the doctoral programmes Allergy, immunology and inflamation (Aii) and Cardiovascular Research. See: https://ki.se/en/staff/doctoralprogrammes.

Kursansvarig :
Khaled Amara
Institutionen för medicin, Solna

Khaled.Amara@ki.se

Kontaktpersoner :
Khaled Amara
Institutionen för medicin, Solna

Khaled.Amara@ki.se

Title : Phenotyping of genetically engineered mice

Kursnummer : 1974
Antal högskolepoäng : 2.0
Datum : 2019-11-12 -- 2019-11-21
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Comparative medicine
Särskild behörighet : Students need to have completed a laboratory animal science course on how to carry out scientific procedures on the appropriate animal species i.e. EU Function A or equivalent course.
Kursens syfte : The course is aimed at doctoral students and postdocs who are in the initial phase of setting up animal experiments using mice. Researchers are introduced to the concept of integrative, comprehensive phenotype analysis with attention to international harmonization of experimental approach and reporting. Emphasis will be focused on morphological phenotype analysis in relation to age, development and in vivo physiological and behavioral parameters. Students will need to prepare oral presentations, which encourage them to reflect on the application of the course content in their own research area, and encourages them to discuss and explain their work with other participants.
Kursens lärandemål : After completion of the course the students should be able to: 1) describe systematic and standardized phenotype analysis of transgenic mice and mice carrying targeted mutations; 2) present and review strategies for production and breeding of genetically engineered mice, with attention to accurate selection of controls; 3) practically handle techniques for analysis of general parameters, experiment termination and organ selection and sampling; 4) select more specialized approaches for evaluation of (neuro)behavioral, physiological and pathomorphological parameters.
Kursens innehåll : The course provides instrumental knowledge for strategic select of endpoints and controls so as to maximize experimental outcome and rationalize the use of experimental animals. Attendees will be presented with theory on breeding, and schedules will be practiced with attention for selection of appropriate controls. Basic knowledge of mouse comparative biology and systematic evaluation of mouse phenotype will be presented during the course, and approaches for experiment termination and organ sampling (necropsy) will be discussed and practically trained. Specialized approaches for evaluation of (cardiovascular) physiology, (neuro) behavioral parameters, and non-invasive as well as post mortem morphological analysis will be presented.
Arbetsformer : The course will consist of lectures, demonstrations and practical necropsy training. Lectures and demonstrations will be interactive with attention to specific research areas as requested by the participants. Participants will practice with breeding schedules for complex genetic modifications and prepare a presentation overviewing application of acquired insights to their area of research. The course is 5 days full-time. Presentations/practical exercises are during office hours, time will be provided to interact with team task-group members during office hours but the necessity for some homework is expected.
Examination : To pass the course the student must actively participate in the lectures and group seminars, and pass the examinations: 1) Individual examination of multiple choice questions during the course; 2) Satisfactorily demonstrate a completed necropsy during the practical; 3) Presentation and discussion of group work summarizing the presented information as relevant for the area of research predominating in the group (3-4 participants per group). A pass/fail criteria will be used as a global rate for this course.
Obligatoriska moment : All scheduled sessions (lectures, demonstrations, practical training and oral presentations/discussions) and active student participation are compulsory if the student is to be provided with certification of the successful completion of the course. Missed parts of the course as a consequence of a well-justified absence will need to be compensated after agreement with the course director e.g. with written assignment.
Antal studenter : 8 - 16
Urval av studenter : Applicants must have completed an appropriate course in laboratory animal science (e.g. to carry out scientific procedures on animals). If necessary, priority will be given to applicants using mouse models in their research project (explained according to a written motivation) and to applicants with an earlier registration date as doctoral students.
Övrig information : This course is a collaboration between the Unit for Education and Training in Laboratory Animal Science, Comparative Medicine, Karolinska Institutet, and the FENO (Morphological Phenotype Analysis) Core Facility at the Department of Laboratory Medicine, Karolinska University Hospital Huddinge. Course leaders are Assoc. Prof. Rafael Frias (Comparative Medicine) and Dr Raoul Kuiper (Laboratory Medicine). Invited speakers include both local and international experts in the topics. The course runs between November 12-21, 2019. Face-to-face lectures, hands-on exercises, oral presentations and group discussions will take place on site for 5 days within this time frame.

Kursansvarig :
Rafael Frias
Komparativ medicin
085246660
rafael.frias@ki.se

Kontaktpersoner :

Raoul Kuiper
Institutionen för laboratoriemedicin

raoul.kuiper@ki.se

Title : Introduction to Medical Education Research

Kursnummer : 2193
Antal högskolepoäng : 6.0
Datum : 2019-09-18 -- 2019-12-05
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Learning, Informatics, Management and Ethics
Särskild behörighet :
Kursens syfte : The participants should develop their understanding of what kind of issues/phenomena that are researched in medical education and get familiar with qualitative and quantitative approaches and methods used in the research field.
Kursens lärandemål : After the course the student is expected to be able to: 1. Reason and argue about the significance of the Medical Education research field in relation to the Higher Educational field. 2. Identify, analyze and describe different kinds of issues and phenomena that are researched in Medical Education. 3. Reflect on and express similarities and differences of different research approaches and methods used in Medical Education Research.
Kursens innehåll : The course content includes studies of the Medical Education field especially: * Significance of professional educational programmes, disciplines and subjects in the medical and health care field * Researching different areas within medical education - student learning, teaching, course/curriculum design, assessment and evaluation * Researching learning and teaching in clinical education and the health care field - supervision, professional development and patient education * Qualitative and quantitative approaches and methods in Medical education research
Arbetsformer : The course design is based on the student's active participation in his/her own learning process. Self -directed learning activities will be stimulated and processed by assignments, lectures, seminars, and group work
Examination : The assessment consists of two main parts: * A reflective paper based on an analysis of a self - chosen thesis within Medical Education. The analysis and reflection is expected to relate to the learning outcomes. * Written and oral self and peer assessment related to assignments, seminars and group work. The assessment criteria (correspondence, coherence, capacity and critical appraisal) must be fulfilled to pass the course.
Obligatoriska moment : Assignments, seminars and group work are compulsory. In order to compensate for absence, students can submit a written report based on the topics discussed during the missed opportunities no later than 1 week after the course.
Antal studenter : 8 - 24
Urval av studenter : This is a four week course which requires time for independent work outside of scheduled class time. Scheduled face-to-face sessions are on the following dates: 18-19 September, 3 October, 23 October, 12 November and 4-5 December (examination seminars). The course is given in English.
Övrig information :

Kursansvarig :
Terese Stenfors
Institutionen för lärande, informatik, management och etik

Terese.Stenfors@ki.se

Kontaktpersoner :
Per Palmgren
Institutionen för lärande, informatik, management och etik

per.palmgren@ki.se

Title : Human embryonic stem cells

Kursnummer : 2212
Antal högskolepoäng : 1.5
Datum : 2019-08-19 -- 2019-08-23
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Biosciences and Nutrition
Särskild behörighet :
Kursens syfte : The purpose of the course is to enable doctoral students to obtain a basic understanding of human reproductive biology with focus on human embryonic stem cell knowledge and cells replacement therapies and translational medicine. Experts in the field will provide a fresh overview of clinical and pre-clinical research aiming at development of novel treatment possibilities, but also discussing current limitations and general ethical aspects. Finally the students will be enabled to improve their capacity to produce coherent, logical and concise explanations of data and concepts - both written and orally, through consideration of the course material.
Kursens lärandemål : At the conclusion of this course students should be able to show a comprehensive view of: - Pre implantation Embryology - Derivation methods and culture conditions of hESCs - Nutritional requirements of the blastocyst and stem cells - Functional characteristics of different tissue culture incubators - Characterization of the embryonic stem cells and the importance of the pluripotency of these cells and what is ongoing in this field - Production of isogenics embryonic stem cells by somatic cell nuclear transfer (SCNT) - The pluripotence induction of somatic cell by transduction (the iPS cells) - Know the prospective possibilities of having a good culture system and be aware of potential development of hESC technology in the future. - Be aware of the general aspects and implication of the stem cells research and the potentiality that these represent for clinical application.
Kursens innehåll : 1. Embryology theory (lectures) 2. In vitro culture system (lectures) 3. Human Embryonic Stem cells culture (lectures) 4. Characterization of hESC (lectures) 5. Laboratory demonstrations 6. Genetics (lectures) 7. Introduction to different cell types (lectures) 8. Cell reprogramming (lectures) 9. Stem cells therapy and challenge today 10. Future in human embryonic stem cells (lecture) Course test, evaluation, discussions, examination and closing of course.
Arbetsformer : Lectures and laboratory demonstrations.
Examination : Written individual examination
Obligatoriska moment : The laboratory parts are obligatory. If absent at laboratory activity; student should present a literature work related with the subject of the missing activity
Antal studenter : 8 - 14
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date).
Övrig information : The course will be held at Karolinska Institutet, Department of Biosciences and Nutrition, NEO- Flemingsberg.

Kursansvarig :
Jose Inzunza
Institutionen för biovetenskaper och näringslära
08-585 850 93
Jose.Inzunza@ki.se

Hälsovägen 7, Novum

141 86
Stockholm

Kontaktpersoner :
Jose Inzunza
Institutionen för biovetenskaper och näringslära
08-585 850 93
Jose.Inzunza@ki.se

Hälsovägen 7, Novum

141 86
Stockholm

Title : Bioinformatics for cell biologists

Kursnummer : 2219
Antal högskolepoäng : 1.5
Datum : 2019-09-23 -- 2019-09-27
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Cell and Molecular Biology
Särskild behörighet : -
Kursens syfte : To increase the understanding of the basic principles of bioinformatics and to gain practical skills in bioinformatics analysis of sequence data.
Kursens lärandemål : After the completed course, the students will be able to utilize basic bioinformatics resources and tools, apply and integrate current, advanced computational biology methods in their research, and to make use of publicly available genome-wide sequencing data sets.
Kursens innehåll : The course covers the use of most common bioinformatics resources such as public data bases and tools for sequence analysis. Practical excercises and discussions bridge sequence analysis to cellular function.
Arbetsformer : The learning activities on the course consist of lectures and practical computer excercises. In addition, the students will be supervised in the preparation of presentations on bioinformatics to benefit their own research.
Examination : Formative examination with practical computer excercises. Summative oral examination in conjunction with the presentation of individual student projects.
Obligatoriska moment : The computer excercises are obligatory. Absence from the obligatory moments is compensated according to the instructions of the course director.
Antal studenter : 12 - 15
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : The course is given as practical and theoretical course in basic cell biology oriented bioinformatics. The course is organized full time at Karolinska Institutet Solna campus. All course participants must bring their own laptop for the course practicalities with the following software pre-installed (or at least downloaded): Python, PyCharm, Java8, R and R studio. Links to all programs will be provided. Note that we will have very limited time to solve the installation problems. The focus will be on the following topics: Introduction to the sequencing techniques and samples preparation for the sequencing. Programming languages: VBA, Python, R with no prior knowledge of programming required. In the part 2 we will practice: alignments, variant calling, RNA-seq data analysis, making sense of gene lists. The main teachers will be Dr. Leonid Bystrykh and Dr. Victor Guryev from the University of Groningen.

Kursansvarig :
Matti Nikkola
Institutionen för cell- och molekylärbiologi

Matti.Nikkola@ki.se

Kontaktpersoner :
Linda Lindell
Institutionen för cell- och molekylärbiologi
08-524 872 90
linda.lindell@ki.se

von Eulers väg 1

171 77
Stockholm

Title : Clinical achievements of reproductive medicine

Kursnummer : 2291
Antal högskolepoäng : 1.5
Datum : 2019-09-02 -- 2019-09-06
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department for Clinical Science, Intervention and Technology
Särskild behörighet :
Kursens syfte : The purpose of the course is to enable doctoral students to obtain a basic understanding of the biological processes involved in human reproduction. Experts in the field will provide with a fresh overview of clinical and pre-clinical research aiming at development of novel treatment possibilities but also discussing their current limitations.
Kursens lärandemål : The learning outcomes of this course are that at the conclusion of this course students should be able to show a comprehensive view of key factors involved in reproductive biology and the processes involved in fertilization and implantation. Additionally, at the end of the course students will be able to perform a critical assessment of reported achievements on reproductive medicine and their current clinical possibilities and limitations.
Kursens innehåll : Contents: Biology of the gametes, fertilization and early embryo development Normal and pathological implantation, early pregnancy loss, ectopic pregnancy, repeated miscarriage In vitro spermatogenesis and oocyte maturation Clinical investigation and therapeutic approach on female and male infertility Genetics in infertility Gonadal dysgenesia Stem cells research Assisted reproduction techniques (ART) In vitro systems and cultures Cloning. Somatic cell nuclear transfer Clinical aspects of fertility preservation Cryobiology systems for fertility preservation Pre-implantation genetic diagnosis Epigenetics in assisted reproduction Experimental reproductive tissue transplantation procedures: -ovarian and testicular tissue transplantation -transplantation of the uterus
Arbetsformer : Lectures, seminars/discussions and laboratory demonstrations.
Examination : Written examination and general group discussion of relevant parts of the examination.
Obligatoriska moment : All teaching activities, including the laboratory sessions, the lectures and the assessments, are obligatory. In case of not attendance to the activities, students should produce a literature work related with the subject of the missing activity upon agreement with the course organizer.
Antal studenter : 8 - 12
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information :

Kursansvarig :
Kenny Rodriguez-wallberg
Institutionen för onkologi-patologi
0858580000
kenny.rodriguez-wallberg@ki.se

Reproduktionsmedicin
Karolinska Universitetssjukhuset Huddinge
141 86
Stockholm

Kontaktpersoner :
Kenny Rodriguez-wallberg
Institutionen för onkologi-patologi
0858580000
kenny.rodriguez-wallberg@ki.se

Reproduktionsmedicin
Karolinska Universitetssjukhuset Huddinge
141 86
Stockholm

Jose Inzunza
Institutionen för biovetenskaper och näringslära
08-585 850 93
Jose.Inzunza@ki.se

Hälsovägen 7, Novum

141 86
Stockholm

Title : Functional Fluorescence Microscopy Imaging (fFMI) in biomedical research

Kursnummer : 2348
Antal högskolepoäng : 3.0
Datum : 2019-11-18 -- 2019-11-29
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Clinical Neuroscience
Särskild behörighet :
Kursens syfte : This course is on advanced fluorescence microscopy imaging and spectroscopy techniques for quantitative characterization of molecular transport and interactions in cells. The purpose of the course is to give an introduction of the underlying physicochemical principles, hands-on experience and an overview of applications of these specialized techniques in biomedical research. The course is suitable for doctoral students lacking training in mathematics, physics, or optical engineering but want to apply these techniques in their research.
Kursens lärandemål : At the end of the course the student will have hands-on experience with live cell imaging and specialized fluorescence microscopy and spectroscopy techniques and is expected to be able to: 1. Use fundamental aspects of molecular structure to describe light-matter interactions and the emission of fluorescence; use this knowledge to discuss fluorescent properties of a fluorophore. 2. Understand the buildup of fluorescence imaging instrumentation, identify different optical elements and describe their function. 3. Describe the theoretical background behind specialized fluorescence based methodologies for studying molecular interactions in live cells. Discuss pros and cons in relation to the biological problem studied. 4. Specify instrumental requirements and design a fluorescence imaging assay for a biological problem of interest. 5. Apply a specific labeling strategy and perform a fluorescence imaging assay. 6. Communicate the results in written and oral form. 7. Discuss the adequateness of the methodology used in the scientific literature concerned.
Kursens innehåll : Fluorescence microscopy and associated techniques are indispensable research tools for investigating molecular mechanisms of biological processes. Versatility of fluorescence microscopy based techniques comes from the possibility to characterize fluorescence emission by spatial position, intensity, wavelength, lifetime and polarization. In addition, fluorescence microscopy and spectroscopy based techniques allow us to quantitatively study the cellular dynamics of molecules and the kinetics of their interaction with high spatio-temporal resolution and ultimate, single-molecule sensitivity. These techniques bring new biological insight at an unprecedented rate and are of crucial importance for the development of life sciences. The course covers the following topics: Luminescence and the nature of light (Fluorescence, Phosphorescence, Light scattering); Fluorescent markers and their photo-physical properties (Organic fluorescent dyes for covalent conjugation (Rhodamine 6G, Alexa dyes, Cyanine dyes); Quantum dots; Intrinsically Fluorescent Proteins (Aequorea victoria (GFP, YFP), Discosoma coral (DsRFP) and Montipora (Keima) families); Selectively binding dyes (DiI, DraQ 5). Instrumentation for Confocal Laser Scanning Microscopy (CLSM): Light sources, Optical Elements, Objectives, Detectors, Read-out devices); Quantization and Sensitivity in fluorescence imaging (Instrumental sensitivity, Method sensitivity, Absolute sensitivity); Factors affecting quantitative accuracy. Point Spread Function; Spatially resolved fluorescence imaging: Multi-photon excitation, Total Internal Reflection Fluorescence (TIRF) Microscopy, Super-resolution techniques (STORM, PALM and STED). Fluorescence based methods for studying molecular diffusion and interactions in live cells (FRAP, FRET, FLIM, FCS, FCCS, RICS). Image analysis techniques for quantitative characterization of cell phenotypes (CellProfiler).
Arbetsformer : The course includes lectures, laboratory training, demonstrations, discussion sessions and short written assignments.
Examination : The final assignment consists of a written project report (5 pages) and an oral presentation of the project report (15 min).
Obligatoriska moment : All sessions are compulsory. Please report any absence to the course leader in advance by e-mail. Absence from any part of the course (lectures, laboratory sessions, discussion sessions and exam) is generally not accepted but could in special cases be compensated by an individually tailored additional module and a special written examination organized by the course committee.
Antal studenter : 8 - 12
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date).
Övrig information : This is a two-week course with 10 sessions that include: lectures, laboratory practice, hands-on training, written assignments, discussions, and time for self-study. The first week focuses on underlying physicochemical principles, instrumentation and hands-on training at the microscope. During this week, specialized techniques are introduced and the details are discussed in the context of a broader body of available techniques. The second week is dedicated to expert lectures on advanced applications and hands-on image analysis. The last session is reserved for assessment. Experimental exercises are carried out in the laboratory for Functional Fluorescence Microscopy Imaging (fFMI) at the Center for Molecular Medicine (CMM), Solna, L5:02, 020a. Lectures are conducted in the seminar room at the Center for Molecular Medicine (CMM), Solna, L8:01, 021.

Kursansvarig :
Vladana Vukojevic
Institutionen för klinisk neurovetenskap

51771797
Vladana.Vukojevic@ki.se

CMM L8:01

17176
Stockholm

Kontaktpersoner :
-

Title : Aktuell omvårdnadsvetenskap - teori och praxis

Kursnummer : 2407
Antal högskolepoäng : 4.5
Datum : 2019-10-04 -- 2019-11-15
Språk : Svenska
Nivå : Forskarnivå
Kursansvarig institution : Department of Neurobiology, Care Sciences and Society
Särskild behörighet : Tidigare studier inom vårdområdet och närliggande områden i förhållande till forskningsprojektets inriktning.
Kursens syfte : Kursen syftar till fördjupning i omvårdnadsämnets begreppsliga och teoretiska grunder, samt granskning och värdering av aktuell omvårdnadsvetenskaplig forskning. Kursen lämpar sig för att formulera och definiera begrepp och teoretiska modeller i förhållande till egen forskning.
Kursens lärandemål : Studerande ska kunna ställa samman vetenskapsteoretiska grunder för teori och begreppsutveckling inom omvårdnad samt kunna tillämpa detta i relation till egen forskningsinriktning. Studerande ska kunna förklara den historiska utvecklingen av omvårdnad som vetenskap och kunna sammanfatta för innehållet i utvalda omvårdnadsteorier. Studerande ska kunna kritiskt granska, analysera och värdera utvecklingen av omvårdnadsvetenskapliga begrepp relaterat till egen forskningsinriktning.
Kursens innehåll : Vetenskapsteoretiska aspekter på omvårdnadsvetenskap Teoriutveckling och begreppsutveckling inom en vetenskap Metateoretiskt perspektiv enligt Meleis Utvecklingen av omvårdnads-/vårdvetenskap i Norden Granskning och värdering av aktuell omvårdnadsforskning
Arbetsformer : Kursen bygger på en huvuddel av självstudier av litteratur. Tre dagar på campus med föreläsningar som inspiration samt seminarier. Ett flertal studieuppgifter och läraktiviteter genomförs i lärplattformen Canvas.
Examination : Litteraturuppgifter på obligatorisk kurslitteratur samt integrativ granskning och analys av omvårdnadsteoretiska grundbegrepp i relation till eget projekt.
Obligatoriska moment : Undervisningsmomenten på campus, föreläsningar, seminarier och webbaserade aktiviteter under kursen är obligatoriska. Frånvaro kompenseras genom skriftliga eller muntliga extrauppgifter vilka beslutas av examinator.
Antal studenter : 10 - 30
Urval av studenter : Urvalet baseras på 1) kursplanens relevans för den sökandes doktorandprojekt (enligt motivering), 2) datum för doktorandregistrering (där tidigare registreringsdatum har förtur).
Övrig information : Kursen ges med tre kursdagar på Campus Flemingsberg och resterande aktiviteter webbaserat i Canvas. Preliminära kursdagar är 4/10, 21/10 och 15/11.

Kursansvarig :
Maria Arman
Institutionen för neurobiologi, vårdvetenskap och samhälle
0852483973
Maria.Arman@ki.se

Kontaktpersoner :
-

Title : Clinical Research in Lipid Metabolism

Kursnummer : 2433
Antal högskolepoäng : 1.5
Datum : 2019-10-21 -- 2019-10-25
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Medicine, Huddinge
Särskild behörighet :
Kursens syfte : The course constitutes an opportunity for the student to gradually increase his/her understanding of clinical research in lipid metabolism during the course of a week. The purpose of the course is to provide comprehensive as well as in depth knowledge in order for the student to be able to apply established models and methods used in this field in his/her own research.
Kursens lärandemål : After the course the students will be able to describe: 1. lipid and lipoprotein metabolism 2. diseases associated with lipid metabolism and their characteristics 3. approaches available and under development for preventing or treating lipid disorders 4. models and laboratory methods used in lipid metabolism in in vivo studies
Kursens innehåll : Overview and new developments within the field of clinical research in lipid metabolism. Emphasis will be laid on cholesterol metabolism, lipoproteins, lipoprotein receptors and on the regulation of enzymes involved in metabolism of cholesterol, bile acids, fatty acids and triglycerides. Genetic diseases and effects of diet on clinical conditions such as atherosclerosis, obesity, diabetes, and gallstone disease will also be highlighted.
Arbetsformer : The course is comprised by lectures.
Examination : The intended learning outcomes of the course will be assessed by a written examination on the last day of the course.
Obligatoriska moment : The lectures are mandatory. All information presented at the lectures is compulsory and will be a significant basis for the written examination. A missed lecture has to be compensated for by completing an essay in accordance with instructions of the organizers.
Antal studenter : 10 - 30
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation) and 2) date for registration as a doctoral student (priority given to earlier registration date).
Övrig information : The course is held in English and lectures and self studies will correspond to 40 working hours (1.5 credits). The location is the Karolinska Institutet at Karolinska University Hospital Huddinge in Flemingsberg. A more detailed location will be announced in proximity to the course.

Kursansvarig :
Sara Straniero
Institutionen för medicin, Huddinge

sara.straniero@ki.se

Kontaktpersoner :
Sara Straniero
Institutionen för medicin, Huddinge

sara.straniero@ki.se

Ylva Bonde
Institutionen för medicin, Huddinge

Ylva.Bonde@ki.se

Title : Public Health Intervention and Implementation Research

Kursnummer : 2454
Antal högskolepoäng : 7.5
Datum : 2019-11-11 -- 2019-12-13
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : The institute of Environmental Medicine
Särskild behörighet :
Kursens syfte : The purpose of the course is to train doctoral students in the latest knowledge and developments in theory, models and frameworks in the field of public health intervention and implementation research necessary to design and conduct trials to the highest possible standards in a given context, to build evidence-based practice.
Kursens lärandemål : At the end of the course, the student should be able to: 1. Define core concepts in intervention and implementation research 2. Understand the concept of evidence-based public health 3. Understand how to critically appraise published intervention and implementation studies 4. Describe theories, models and frameworks of intervention and implementation research 5. Design an intervention study, which includes a relevant problem theory and a programme theory and describe the evaluation design 6. Design an implementation study of an evidence-based programme or practice, and describe the evaluation design
Kursens innehåll : As this course aims at giving doctoral students knowledge in theory, method and frameworks in the field of public health intervention and implementation research, the content focuses on the following themes: 1. Theories, models and frameworks in intervention and implementation research 2. How to apply a theoretical perspective using relevant theories 3. Intervention and implementation core components, barriers and facilitators 4. Appropriate study designs for process and outcome evaluation 5. Systematic and critical appraisal of published intervention and implementation studies 6. Dissemination of scientific results
Arbetsformer : The course is based on lectures in combination with seminars in order to promote a reflective, analytical and critical approach towards this research field. The course will also use group assignments and group discussions to promote the students active participation in their learning process, as well as the ability to accomplish tasks both individually and in groups. All teaching activities aim at enhancing the student's ability to apply for example core concepts and theoretical frameworks, in an analytical and reflective practice and to apply this on the students own research projects. All teachers in the course are researchers in the field of intervention and implementation research.
Examination : The students' knowledge and skills in theory, models and frameworks in the field of public health interventions and implementation research will be assessed in relation to the expected learning outcomes through the following examinations: a. Active participation in seminars with presentations, in discussions and short seminar reports b. A written study protocol, oral presentation of the protocol and opposition
Obligatoriska moment : Participation in scheduled seminars and group work and examination is compulsory. Absence is compensated through a written summary of the literature for the seminar where the absence occurred.
Antal studenter : 12 - 25
Urval av studenter : Selection will be based on the relevance of the course syllabus for the applicant's doctoral project (according to written motivation)
Övrig information : Lectures and seminars will be scheduled on Mondays, Tuesday and Wednesdays between 9.00 and 15.00 at Karolinska Institutet Solna Campus.

Kursansvarig :
Lydia Kwak
Institutet för miljömedicin

Lydia.Kwak@ki.se

Kontaktpersoner :
Johanna Bergman
Institutet för miljömedicin

johanna.bergman@ki.se

Nobels väg 13

17177
Stockholm

Title : Thrombosis and Hemostasis, from mechanisms to therapies

Kursnummer : 2484
Antal högskolepoäng : 1.5
Datum : 2019-11-04 -- 2019-11-08
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Medicine, Solna
Särskild behörighet :
Kursens syfte : The aim of the course is that doctoral students acquire in-depth knowledge of thrombosis and hemostasis, as well as to elucidate the links between molecular mechanisms and clinical disorders and to introduce current advances and future directions of thrombosis research.
Kursens lärandemål : The concept from bench to bed side and back will be reinforced at all levels. Therefore, at the end of the course the students should be able to: 1. Describe the molecular and cellular mechanisms of haemostasis and thrombosis, as well as the dynamic processes of primary haemostasis, secondary haemostasis, and thrombosis. 2. Explain the mechanisms underlying bleeding and thrombotic disorders. 3. Have a good understanding of current anticoagulant and antiplatelet therapies, and obtain a clear view of the challenges of future anticoagulant and antiplatelet drug developments. 4. Apply current knowledge of thrombosis and haemostasis into future research design and to formulate new treatment strategies. 5. Sharpen the sense of critical appreciation of research literature, and strengthen their ability to develop new research concepts through critical reading.
Kursens innehåll : The course aims to bring in in-depth knowledge of thrombosis and hemostasis, and to emphasize a translational view, from bench to bed side and back, of the hemostatic system to the students. The course is designed for the students who work in both basic and clinical aspects of hemostasis, thrombosis and cardiovascular research. The following aspects of hemostasis and thrombosis will be discussed: biochemistry of the blood clotting system; cell-cell and cell-protein interactions in the cardiovascular system in relation to thrombosis and bleeding disorders; cross-talks of the clotting system with inflammation, host defense and complement systems; diagnosis of bleeding and thrombotic disorders; therapeutic strategies to fight thrombosis and bleeding with the emphasis placed on new pharmacological concepts.
Arbetsformer : Lectures Seminars Group work Presentation of papers related to the key lectures
Examination : Presentation of a paper related to key lectures Short written homework. Multiple-choice test.
Obligatoriska moment : To participate in the lectures, group work and presentation of the group work is compulsory. The students who have missed the group work sessions can book extra session time within 4 weeks to compensate the absence. Absence in lectures should be compensated for in accordance with the course director.
Antal studenter : 8 - 25
Urval av studenter : Selection will be based on: 1) The relevance of course subject to the applicant's research project (according to written motivation) 2) Importance/urgency of thrombosis and coagulation knowledge for the applicant's research project (according to written motivation) 3) Previous application (priority given to those who have applied previously)
Övrig information : The course will be held during week 45 (9:00-16:30). Lecture hall booked: Course room 1 (the room by Japanese garden), L2:U1 at Karolinska University Hospital-Solna. The course includes 16 lectures given by the experts in corresponding subjects, group work, as well as group work presentation and discussion. The course has been organized many times at KI during last two decades. The course has been well received by the participants, and is known for its good coverage of course subject and well-balanced pre-clinical and clinical contents.

Kursansvarig :
Nailin Li
Institutionen för medicin, Solna
08-51773996
Nailin.Li@ki.se

Clinical Pharmacology Unit
Karolinska University Hospital-Solna
17176
Stockholm

Kontaktpersoner :
Angela Silveira
Institutionen för medicin, Solna
08-51773224
Angela.Silveira@ki.se

Title : Obesity - basic science, clinical and epidemiological aspects

Kursnummer : 2498
Antal högskolepoäng : 1.5
Datum : 2019-11-18 -- 2019-11-22
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Clinical Sciences, Danderyd Hospital
Särskild behörighet :
Kursens syfte : This course will enable the doctoral student to acquire the necessary knowledge to integrate clinical and research knowledge and understanding, competence and skills, judgement and approach in the field of obesity in order to facilitate a role as a future scientist and/or clinician in this field.
Kursens lärandemål : At the end of the course the students should be able to: 1, Discuss different hypothesis and theories concerning the pathogenesis of obesity 2, Discuss occurrence of obesity and co-morbid diseases in society 3, Discuss current treatment methods of obesity and effects of these treatments on co-morbid diseases 4, Discuss methods to prevent obesity and methods used to evaluate effects of treatment and prevention 5, To relate clinical and public health aspects of obesity to research aspects of obesity
Kursens innehåll : The course is to give an overview of obesity in society, pathogenesis and current treatment methods. These clinical examples will be used to demonstrate how one can design various research projects related to obesity and co-morbid disease; pre-clinical, clinical, epidemiological and preventive projects.
Arbetsformer : The course will be based on lectures, work in small seminar groups and demonstration of surgery of obesity.
Examination : Written examination
Obligatoriska moment : Presence at lectures, group work and demonstration is mandatory. Absence must be compensated by a written task.
Antal studenter : 10 - 20
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : The course will take place at Danderyd University Hospital.

Kursansvarig :
Erik Näslund
Institutionen för kliniska vetenskaper, Danderyds sjukhus
086555017
Erik.Naslund@ki.se

Kontaktpersoner :
Daniel Berglind
Institutionen för folkhälsovetenskap

Daniel.Berglind@ki.se

Richard Marsk
Institutionen för kliniska vetenskaper, Danderyds sjukhus

richard.marsk@ki.se

Title : Mass spectrometry-based proteomics: When and How.

Kursnummer : 2522
Antal högskolepoäng : 3.0
Datum : 2019-11-11 -- 2019-11-22
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Oncology-Pathology
Särskild behörighet :
Kursens syfte : The aim of this course is to give an overview of mass spectrometry based proteomics for researchers who would like to be able to apply these techniques in their own research.
Kursens lärandemål : After completed the course, the student will be able to -Define and apply common proteomics terminology -Recognize the principles of the most common proteomics techniques -Understand the mass spectrometry based proteomics workflow: Experimental design, sample preparation and selection of techniques -Understand proteomics to such an extent that he/she will be able to utilize proteomics core facilities or collaborate with proteomics researchers. -Evaluate the quality of protein and peptide identifications. -Demonstrate how modern proteomics is applied to clinical research and to evaluate when proteomics research could be beneficial to incorporate in research projects. -Design their own research project by mass spectrometry based proteomics.
Kursens innehåll : Lectures and workshops on -Overview of proteomics -The proteomics workflow -Basic of separation sciences: Protein and peptides -Introduction to Mass spectrometry -Experimental design -Sample preparation, immunoprecipitation and enrichment strategy -Quantitative and qualitative proteomics by mass spectrometry -Global and targeted proteomics -Human protein atlas and Biological validation -Clinical applications A practical laboratory exercise using mass spectrometry based proteomics This course is focusing on proteomics technologies and applications, for proteomics data analysis we recommend our KI doctoral course "Omics data analysis: From quantitative data to biological information"
Arbetsformer : The course contains lectures, seminars, and a practical laboratory exercise using proteomics techniques. The students will plan their own project as a case study as well make an oral laboratory report.
Examination : -Students shall describe a proteomics project (beneficially related to their research) including different aspects from the proteomics workflow. This is handed in as a written exam. -The students shall perform an oral laboratory report
Obligatoriska moment : -Attendance at lectures and the practical laboratory exercise. -Attendance at examination seminar and hand in the written examination assignment. -Extra written assignments can be used to compensate absence. The students are recommended to read literatures listed below in advance of the course.
Antal studenter : 12 - 20
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : This course is included in the doctoral programmes Allergy, immunology and inflammation (Aii) and Biology of Infections and Global Health Programme (BIGH). See https://ki.se/en/staff/doctoral-programmes.

Kursansvarig :
Henrik Johansson
Institutionen för onkologi-patologi

henrik.johansson@ki.se

Kontaktpersoner :
Rozbeh Jafari
Institutionen för onkologi-patologi

rozbeh.jafari@ki.se

Mattias Vesterlund
Institutionen för onkologi-patologi

Mattias.Vesterlund@ki.se

Title : Neuropschopharmacology

Kursnummer : 2526
Antal högskolepoäng : 2.0
Datum : 2019-12-02 -- 2019-12-06
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Clinical Neuroscience
Särskild behörighet :
Kursens syfte : We are organizing a course in neuropsychopharmacology for graduate students who are interested in clinical and preclinical research in affective disorders, schizophrenia, drug dependence, and anxiety-related disorders. The purpose of this course is to highlight these psychiatric disorders, summarize current treatment strategies, and to discuss new ideas and future research ambitions within this field.
Kursens lärandemål : By the end of this course the PhD students should: 1) have achieved an understanding of the etiology of psychiatric disorders and are able to account for different hypotheses in this field and how the major psychiatric diseases are treated. 2) possess skills and abilities to describe, discuss, understand as well as choosing appropriate methods and animal models for studying the effects of drugs on different symptoms of psychiatric diseases. 3) be able to evaluate data and preclinical research within the research fields of psychiatric diseases.
Kursens innehåll : This course will focus on pharmacological strategies in the treatment of psychiatric disorders, e.g. schizophrenia, major depression etc. The course will also discuss methods and models which are used in preclinical research concerning the mechanisms of action of different drugs in the treatment of these disorders.
Arbetsformer : The pedagogic framing of the course include lectures given by invited clinicians and researchers within the field of psychiatric disorders. We will also have demonstrations of key models/methods which are used in specific research projects.
Examination : Written exam
Obligatoriska moment : The demonstrations are mandatory. The student has to compensate absense from this part with a written description of the model/method.
Antal studenter : 10 - 35
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : The course is for doctoral students interested in clinical and preclinical research on affective disorders, schizophrenia, drug dependence, and anxiety-related disorders. Our aim is to teach students about: 1) Disease etiology 2) Relevant and current pre-clinical models and clinical research 3) Pharmacological, and other treatment strategies 4) Interesting hypotheses and what lies ahead for future research

---

Kursansvarig :
Kent Jardemark
Institutionen för fysiologi och farmakologi
0768649348
Kent.Jardemark@ki.se

Kontaktpersoner :
Per Svenningsson
Institutionen för klinisk neurovetenskap
0852487926
Per.Svenningsson@ki.se

Vasco Sousa
Institutionen för klinisk neurovetenskap

vasco.sousa@ki.se

Title : Writing science and information literacy

Kursnummer : 2561
Antal högskolepoäng : 3.0
Datum : 2019-08-26 -- 2019-10-18
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Karolinska Institutet University Library
Särskild behörighet :
Kursens syfte : The aim of the course is to develop the medical scientific writing skills and information literacy of the participant.
Kursens lärandemål : After the course, you will be able to demonstrate: -understanding of how to write an original scientific article and submit it for publication. -the ability to write other types of texts required for a scientific career. -the ability to give, take and make use of constructive criticism. -the ability to search and manage the medical sciences literature in a structured way. -the ability to use resources which facilitate choosing a journal to publish your research. -and be able to describe aspects of post-publication evaluation and processing of the medical sciences literature.
Kursens innehåll : Basics of scientific writing, Searching the literature, Writing an original scientific paper, Supporting the text, Managing the literature, Scientific writing in other contexts, Choosing a journal, The publication process, Evaluating published science.
Arbetsformer : This 100% ONLINE course (there is also a KI Campus version with course code 1391) will be held using the learning management system Ping Pong. Content will be learnt with various learning objects and learning practiced by exercises. Formative feedback will be given by teachers/peer/self-assessment. Scientific writing, literature management and other IT-related skills will be developed in the context of scientific communication.
Examination : The intended learning outcomes are assessed in the summative examination. Participants will write and rewrite a grant application and popular science summary based on teacher and peer feedback. Participants will also complete a number of assignments which demonstrate their ability to use relevant IT resources in a context of scientific writing and communication.
Obligatoriska moment : There will be a number of obligatory assignments and assessments to be completed.
Antal studenter : 20 - 22
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information :

Kursansvarig :
David Herron
Karolinska Institutet universitetsbibliotek
08-524 841 13
David.Herron@ki.se

Berzelius 7B

17177
Stockholm

Kontaktpersoner :
Katarina Amcoff
Karolinska Institutet universitetsbibliotek
08-524 840 47
katarina.amcoff@ki.se

Title : Neurogenetics

Kursnummer : 2600
Antal högskolepoäng : 1.5
Datum : 2019-10-07 -- 2019-10-11
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Neurobiology, Care Sciences and Society
Särskild behörighet :
Kursens syfte : The purpose of the course is to introduce the concepts and methodology applied in human genetic studies in general with examples from human diseases in the nervous system and to use this knowledge to prepare and present oral presentations as well as ask and answer questions. The course will also allow interaction between PhD-students with master students in their second year, both with a special interest in neuroscience. A potential purpose for students attending all 6 courses given in sequence (Frontiers Courses in Neuroscience) is also to place Neurogenetics in a greater research context.
Kursens lärandemål : I) The student will be able to understand and describe the major differences and uses of human genetic studies of neurogenetic diseases using i) Twin-studies, ii) population based studies, iii) case-control studies, iv) family studies. Students will have an in depth knowledge and understanding of selected neurologic conditions such as Alzheimer disease, trinucleotide repeat disorders, their genetic basis and an insight into the molecular pathogenesis, if known. II) The students will also be able to describe how genetic studies can be used to increase our understanding of the biological basis of neurological conditions. III) The students will be able to contribute substantially to critical evaluation and presentation of scientific articles in the field of neurogenetics. IV) The students will have an understanding of the different genetic techniques and platforms available for studies in human (neurological) conditions.V) The students will have an insight in the application/use of genetic testing for neurological diseases.
Kursens innehåll : I) The course will give examples of how different types of genetic studies can help us identify genes involced in the pathogenesis of neurological disease: i) Twin-studies, ii) population based studies, iii) case-control studies, iv) family studies. II) The course will give examples of different gene defects in neurological diseases such as trinucleotide repeats, point mutations, copy number variations, susceptibility genes, rearrangements, transciptional regulation and epigenetics. III) The course will provide an in depth understanding of the genetics of selected neurological diseases and how these genetic dysfunctions help us understand the molecular mechanisms of disease.
Arbetsformer : Daily class-room lectures. Time will be allocated for students to prepare a group presentation of a selected topic/genetic neurological disease. The presentation will be on the last day of the course and constitutes the examination.
Examination : The examination will be on the last day of the course and it will consist of i) participating in a group presentation of a selected topic/genetic neurological disease ii) participate as an active audience when other groups have their presentations. Every student will be assessed individually in accordance with the intended learning outcomes of the course.
Obligatoriska moment : All lectures/seminars are compulsory and in case of absence, the session can be compensated by a short written report using the literature after agreement with the course director.
Antal studenter : 8 - 20
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : The course will be held in Solna, most likely in Bioclinicum.

Kursansvarig :
Caroline Graff
Institutionen för neurobiologi, vårdvetenskap och samhälle
733839399
Caroline.Graff@ki.se

Bioclinicum J10:20
Visionsgatan4
17164
Solna

Kontaktpersoner :
Eva Kallstenius
Institutionen för neurobiologi, vårdvetenskap och samhälle
08-52483522
eva.kallstenius@ki.se

Title : Epigenetics and its Applications in Clinical Research

Kursnummer : 2601
Antal högskolepoäng : 1.5
Datum : 2019-10-21 -- 2019-10-25
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Clinical Neuroscience
Särskild behörighet : -
Kursens syfte : The purpose of the course is to give doctoral students a basic understanding of the epigenetic mechanisms and their role in the etiology of common complex diseases. Through examples of cutting edge technologies and their applications in studying complex diseases such as cancer and chronic inflammation, students will be encouraged to think about translation of epigenetic principles and approaches into novel clinical applications. The course will also help students to practice key academic skills such as asking questions, forming hypothesis and designing experiments, and conducting assessment and providing constructive feedback.
Kursens lärandemål : After this course the student should be able to: (i) describe the basic epigenetic mechanisms (DNA methylation, histone modifications and non-coding RNAs) and explain how they regulate gene expression, (ii) evaluate selected methodology used in epigenetic research, compare methods and discuss their advantages and limitations, (iii) evaluate and interpret new findings and recent scientific papers in the field, (iv) speculate on epigenetic mechanisms underlying health and disease, and (v) hypothesize on applications of epigenetic research in prediction, prevention and therapy of common diseases.
Kursens innehåll : First part of the course includes overview of basic epigenetic mechanisms (DNA methylation, histone modifications, non-coding RNAs and chromatin organization). The course also covers the main methodology used to study epigenetics (such as methods used to detect and quantify DNA methylation, chromatin immunoprecipitation, next generation sequencing and bioinformatics tools, chromosome confirmation capture etc). Second part of the course focuses on key epigenetic mechanisms in cell development, differentiation and disease (cancer, inflammation, metabolic disorders etc). Current applications of epigenetic research in common diseases, and future perspectives will also be discussed.
Arbetsformer : The course combines traditional lectures, given by internal and international experts in the field, with group discussions and individual assignments performed by the students. Extra time for students' discussions with international speakers will be allocated. The individual assignments will consist of presenting and discussing potential applications of epigenetics in the students' own research questions and projects.
Examination : Examination will be based on a successful completion of the individual assignments which will consist of presenting and discussing potential applications of epigenetics in the students' own research questions and projects. The students are expected to present scientifically-sound motivation for their application and to provide a constructive feedback to their peers.
Obligatoriska moment : All lectures, individual assignments and evaluations are compulsory. Compensation for absence (in a form of an essay) can be discussed with the course directors.
Antal studenter : 15 - 30
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date).
Övrig information : DATE AND TIME: 21st-25th of October 2019 (Monday-Friday), 9:00-17:00. LOCATION: Center for Molecular Medicine (CMM), Karolinska University Hospital, Solna (Lecture hall at level 0).
 LAST OCCASION'S (2012 & 2015 & 2017) speakers included Dr E. Ballestar, Spain (epigenetic regulation of immune system); Prof K. Ekwall and Dr G. Castelo-Branco, KI (histone modifications in health and disease); Prof E. Hellström-Lindberg and Prof S. Lehmann, KI (cancer treatment with epigentic drugs); Dr B. Heijmans, Holland (environmentally induced epigenetic changes); Dr J. Bell, UK and Dr Å. Johansson, UU (genetic and environmental impacts on epigenome); Dr A. Göndor, KI (higher order chromatin organization); Dr L. Kular and Dr I. Barragan, KI (methylation and hydroxymethylation); Dr C. Ling, Lund (epigenetics and diabetes); Dr G. Lind, Norway (diagnostic epigenetic methods in cancer); Dr A. Pivarsci, KI (microRNAs); Dr C. Kutter, KI and Dr M. Huarte, Spain (non-coding RNAs); Prof M. Mannervik, SU (epigenome-editing); Dr D. Gomez-Cabrero, Dr. F. Marabita and Dr P. Ewels, SciLifeLab (bioinformatics analysis of DNA methylation and ChIP-seq) etc.

Kursansvarig :
Maja Jagodic
Institutionen för klinisk neurovetenskap
+46851776258
Maja.Jagodic@ki.se

Neuroimmunology Unit, CMM, L8:04

17176
Stockholm

Kontaktpersoner :

Andreas Lennartsson
Institutionen för biovetenskaper och näringslära
08-524 811 54
andreas.lennartsson@ki.se

Title : Basic Course in Medical Statistics - a distance course

Kursnummer : 2609
Antal högskolepoäng : 3.0
Datum : 2019-11-25 -- 2019-12-06
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Learning, Informatics, Management and Ethics
Särskild behörighet :
Kursens syfte : The aim of the course is to introduce the basic statistical methods and the fundamental principles of statistical inference and to offer basic skills that involve hands on data analysis using statistical software.
Kursens lärandemål : The course participants shall after the course be able to; 1) perform and interpret basic descriptive statistics from frequency tables and graphical presentations, 2) perform and interpret results from basic inferential statistical analysis and tests, 3) recognize and critically examine the statistics being presented in articles within the medical field of research.
Kursens innehåll : Concepts being treated are descriptive vs inferential statistics, collection of data and study design, different types of data and level of measurement, independent and dependent samples, correlation and regression, hypothesis testing and different type of statistical errors in relation to the testing and data collection procedure. The major topics for the course are t-test, chi-square test, nonparametric test and regression analysis, and how to evaluate the assumptions for the different techniques.
Arbetsformer : The course is a hybrid course mixing online studies with face-to-face in-class final seminars. The course activities are video lectures, self-study, self-assessment exercises, individual computer based exercises, and statistical software demonstration videos in Statistica and SPSS. The first and last day of the course will be face-to-face with an introduction the first day and seminars and group discussions the last day.
Examination : Correct answers on the individual computer based exercises. The doctoral students will have to demonstrate their ability to recognize, critically examine and discuss the statistics presented in the medical articles during the seminars.
Obligatoriska moment : Attendance is mandatory for the seminars on the last day of the course. If the student is absent, he or she will have priority for admission to the seminars the next time the course is offered. If a student joins the course when physically located in another country it is the student's responsibility to contact the course director in advance to agree on an individual supplementary task to compensate for the absence.
Antal studenter : 40 - 45
Urval av studenter : Date for registration as a doctoral student (priority given to earlier registration date). Please make sure that you have entered the correct registration date for doctoral education in your personal profile.
Övrig information : Course dates at KI Campus Solna: November 25th (not mandatory) and December 6th (mandatory).

Kursansvarig :
Mesfin Tessma
Institutionen för lärande, informatik, management och etik

Mesfin.Tessma@ki.se

Kontaktpersoner :
Elisabeth Löfgren
Institutionen för lärande, informatik, management och etik

elisabeth.lofgren@ki.se

Title : Basic Course in Medical Statistics - a distance course

Kursnummer : 2609
Antal högskolepoäng : 3.0
Datum : 2019-09-30 -- 2019-10-11
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Learning, Informatics, Management and Ethics
Särskild behörighet :
Kursens syfte : The aim of the course is to introduce the basic statistical methods and the fundamental principles of statistical inference and to offer basic skills that involve hands on data analysis using statistical software.
Kursens lärandemål : The course participants shall after the course be able to; 1) perform and interpret basic descriptive statistics from frequency tables and graphical presentations, 2) perform and interpret results from basic inferential statistical analysis and tests, 3) recognize and critically examine the statistics being presented in articles within the medical field of research.
Kursens innehåll : Concepts being treated are descriptive vs inferential statistics, collection of data and study design, different types of data and level of measurement, independent and dependent samples, correlation and regression, hypothesis testing and different type of statistical errors in relation to the testing and data collection procedure. The major topics for the course are t-test, chi-square test, nonparametric test and regression analysis, and how to evaluate the assumptions for the different techniques.
Arbetsformer : The course is a hybrid course mixing online studies with face-to-face in-class final seminars. The course activities are video lectures, self-study, self-assessment exercises, individual computer based exercises, and statistical software demonstration videos in Statistica and SPSS. The first and last day of the course will be face-to-face with an introduction the first day and seminars and group discussions the last day.
Examination : Correct answers on the individual computer based exercises. The doctoral students will have to demonstrate their ability to recognize, critically examine and discuss the statistics presented in the medical articles during the seminars.
Obligatoriska moment : Attendance is mandatory for the seminars on the last day of the course. If the student is absent, he or she will have priority for admission to the seminars the next time the course is offered. If a student joins the course when physically located in another country it is the student's responsibility to contact the course director in advance to agree on an individual supplementary task to compensate for the absence.
Antal studenter : 40 - 45
Urval av studenter : Date for registration as a doctoral student (priority given to earlier registration date). Please make sure that you have entered the correct registration date for doctoral education in your personal profile.
Övrig information : Course dates at KI Campus Solna: September 30th (not mandatory) and October 11th (mandatory).

Kursansvarig :
Mesfin Tessma
Institutionen för lärande, informatik, management och etik

Mesfin.Tessma@ki.se

Kontaktpersoner :
Elisabeth Löfgren
Institutionen för lärande, informatik, management och etik

elisabeth.lofgren@ki.se

Title : Frontiers in Cogntive Neuroscience

Kursnummer : 2616
Antal högskolepoäng : 1.5
Datum : 2019-09-09 -- 2019-09-13
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Neuroscience
Särskild behörighet : 180 hp in medicine, biomedicine, biology, psychology, or cognitive science, or master degree in medical imaging engineering
Kursens syfte : Students attending this course will be exposed to exciting new research in cognitive neuroscience, and learn to evaluate and critically discuss recent findings.
Kursens lärandemål : After the course the student must be able to: (1) account for current concepts and key principles of cognitive neuroscience; (2) show an understanding of the inter-disiplinary nature of cognitive neuroscience with its roots in both psychology and neuroscience; (3) discuss and critically evaluate scientific articles in the field; (4) To show basic knowledge about the strengths and weakness of the different state-of-the-art methods used in cognitive neuroscience.
Kursens innehåll : (1) Series of lectures informing about the state of art knowledge about: (i) Perception and sensory mechanisms; (ii) action planning and execution (iii); (iv) sex differences in the brain; (v) higher cognitive functions including working memory and creativity; (vi) memory; and (vii) cognitive effects of aging (2) Seminars where the students will critically discuss key published papers, and group presentations where they will present their analyses and conclusions for the whole group.
Arbetsformer : Lectures, seminars, and group presentations.
Examination : The oral presentation and group discussions during the last days seminar count as examination. We will assess individual studentsability to discuss and reason about current issues and problems in cognitive neuroscience.
Obligatoriska moment : The group seminar is obligatory. In addition to that, the students are assumed to take part in the lectures. The student will be able to compensate missing attendance by submitting written reports on the missed material later.
Antal studenter : 12 - 30
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : The course is held as full days all week with lectures and some time devoted to preparing for group presentations.

Kursansvarig :
Henrik Ehrsson
Institutionen för neurovetenskap
0852487231
Henrik.Ehrsson@ki.se

Retzius väg 8

17177
Stockholm

Kontaktpersoner :
-

Title : Write your research results and get them published

Kursnummer : 2618
Antal högskolepoäng : 3.0
Datum : 2019-09-02 -- 2019-09-13
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Women's and children's health
Särskild behörighet : None.
Kursens syfte : The purpose of the course is to impart knowledge and practical experience in scientific writing, based on own research, including manuscript, abstract and cover letter writing and scientific poster design.
Kursens lärandemål : AFTER ATTENDING THE COURSE, THE DOCTORAL STUDENT SHOULD BE ABLE TO: - Explain the characteristics and disposition of different written presentation media and decide which forum is the most suitable for a specific text - Understand, and apply, the terminology associated with scientific writing - Write an abstract - Use the correct structure and language to compose a scientific paper, following the editorial requirements - Revise a manuscript according to a checklist with the most common language and structure mistakes in scientific writing - Use the focus points in a scientific paper (where the readers focus their reading) - Identify the main scope and focus of the research and summarize information aligned to the target group - Apply the structure of popular science writing and use popular science as a tool for presentations - Give a poster presentation - Design a scientific poster and reflect upon structure, language and style - Understand the ethics in publication - Use the software EndNote for reference management - Search for references in databases (e.g. PubMed) and decide what sources are reliable - Respond to the reviewer's comments - Write a cover letter - Reflect on own development as a writer of different texts during the course
Kursens innehåll : THE MAIN SCOPE OF THE COURSE is how to write about research in different contexts and forums. THE CONTENT OF THE COURSE: 1. Terminology associated to scientific writing 2. Designing and writing a) a poster b) an abstract c) a draft for a research paper d) a cover letter e) a reply to the reviewer´s comments f) a cover letter g) a popular science paper 3. The writing process: structure, language, style 4. Editorial requirements of different journals 5. Summarizing and presenting information aiming at the target audience 6. Identifying the main scope of a research project 7. References and reference management (EndNote software) 8. Data base search 9. Basic rhetoric for poster presentations 10. References 11. Ethics in publication
Arbetsformer : Lectures, seminares, writing exercises, group assignments and practical exercises. As part of the learning process, the Ph.D students will be members of in-class review groups, giving feed-back to their colleagues.
Examination : 1) Written assignments reflecting the intended learning outcomes of the course: draft for scientific paper, popular science paper, poster, cover letter, and abstract. All assignments can be based on own research (if applicable). 2) Evaluation sessions, where the PhD students give each other feed back on the written assignments as a part of the learning process 3) Poster presentation, where the PhD students present their posters to a small group of course participants (there are no presentations in front of a larger group)
Obligatoriska moment : Lectures, workshops, evaluation sessions, and group assignments as well as all written assignments. Absence can be compensated: a) during next course occasion b) individual assignments
Antal studenter : 18 - 22
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to LATER registration date).
Övrig information : Welcome to apply for PhD course "Write your research results and get them published"!

 The course focuses on scientific writing (manuscript, abstract and poster) and you will be writing about your own research (but there is no requirement to bring data of your own in order to benefit from the course) to maximize the learning experience and also to make actual progress in your studies. The course includes manuscript writing, poster design and presentation, cover letter writing, abstract writing and popular science writing. The popular science part is covering the skills you need in order to successfully write a popular science summary for e.g. a project plan or to apply for grants and is also helpful for oral presentations. No prior knowledge or experience in scientific writing is required to attend the course, but you will benefit equally from the course if you have published your research before.

 The course will be given in a venue in the Old Town in Stockholm. Please address ALL questions to: anna.wachtmeister@ki.se or phone: 0707890607

Kursansvarig :
Anna Hildenbrand Wachtmeister
Institutionen för kvinnors och barns hälsa
070-789 06 07
Anna.Hildenbrand.Wachtmeister@ki.se

Kontaktpersoner :
Anna Hildenbrand Wachtmeister
Institutionen för kvinnors och barns hälsa
070-789 06 07
Anna.Hildenbrand.Wachtmeister@ki.se

Lalit Kumar
Institutionen för kvinnors och barns hälsa

Lalit.Kumar@ki.se

Title : Write your research results and get them published

Kursnummer : 2618
Antal högskolepoäng : 3.0
Datum : 2019-11-04 -- 2019-11-15
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Women's and children's health
Särskild behörighet : None.
Kursens syfte : The purpose of the course is to impart knowledge and practical experience in scientific writing, based on own research, including manuscript, abstract and cover letter writing and scientific poster design.
Kursens lärandemål : AFTER ATTENDING THE COURSE, THE DOCTORAL STUDENT SHOULD BE ABLE TO: - Explain the characteristics and disposition of different written presentation media and decide which forum is the most suitable for a specific text - Understand, and apply, the terminology associated with scientific writing - Write an abstract - Use the correct structure and language to compose a scientific paper, following the editorial requirements - Revise a manuscript according to a checklist with the most common language and structure mistakes in scientific writing - Use the focus points in a scientific paper (where the readers focus their reading) - Identify the main scope and focus of the research and summarize information aligned to the target group - Apply the structure of popular science writing and use popular science as a tool for presentations - Give a poster presentation - Design a scientific poster and reflect upon structure, language and style - Understand the ethics in publication - Use the software EndNote for reference management - Search for references in databases (e.g. PubMed) and decide what sources are reliable - Respond to the reviewer's comments - Write a cover letter - Reflect on own development as a writer of different texts during the course
Kursens innehåll : THE MAIN SCOPE OF THE COURSE is how to write about research in different contexts and forums. THE CONTENT OF THE COURSE: 1. Terminology associated to scientific writing 2. Designing and writing a) a poster b) an abstract c) a draft for a research paper d) a cover letter e) a reply to the reviewer´s comments f) a cover letter g) a popular science paper 3. The writing process: structure, language, style 4. Editorial requirements of different journals 5. Summarizing and presenting information aiming at the target audience 6. Identifying the main scope of a research project 7. References and reference management (EndNote software) 8. Data base search 9. Basic rhetoric for poster presentations 10. References 11. Ethics in publication
Arbetsformer : Lectures, seminares, writing exercises, group assignments and practical exercises. As part of the learning process, the Ph.D students will be members of in-class review groups, giving feed-back to their colleagues.
Examination : 1) Written assignments reflecting the intended learning outcomes of the course: draft for scientific paper, popular science paper, poster, cover letter, and abstract. All assignments can be based on own research (if applicable). 2) Evaluation sessions, where the PhD students give each other feed back on the written assignments as a part of the learning process 3) Poster presentation, where the PhD students present their posters to a small group of course participants (there are no presentations in front of a larger group)
Obligatoriska moment : Lectures, workshops, evaluation sessions, and group assignments as well as all written assignments. Absence can be compensated: a) during next course occasion b) individual assignments
Antal studenter : 18 - 22
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to LATER registration date).
Övrig information : Welcome to apply for PhD course "Write your research results and get them published"!

 The course focuses on scientific writing (manuscript, abstract and poster) and you will be writing about your own research (but there is no requirement to bring data of your own in order to benefit from the course) to maximize the learning experience and also to make actual progress in your studies. The course includes manuscript writing, poster design and presentation, cover letter writing, abstract writing and popular science writing. The popular science part is covering the skills you need in order to successfully write a popular science summary for e.g. a project plan or to apply for grants and is also helpful for oral presentations. No prior knowledge or experience in scientific writing is required to attend the course, but you will benefit equally from the course if you have published your research before.

 The course will be given in a venue in the Old Town in Stockholm. Please address ALL questions to: anna.wachtmeister@ki.se or phone: 0707890607

Kursansvarig :
Anna Hildenbrand Wachtmeister
Institutionen för kvinnors och barns hälsa
070-789 06 07
Anna.Hildenbrand.Wachtmeister@ki.se

Kontaktpersoner :
Anna Hildenbrand Wachtmeister
Institutionen för kvinnors och barns hälsa
070-789 06 07
Anna.Hildenbrand.Wachtmeister@ki.se

Lalit Kumar
Institutionen för kvinnors och barns hälsa

Lalit.Kumar@ki.se

Title : Write your research results and get them published

Kursnummer : 2618
Antal högskolepoäng : 3.0
Datum : 2019-12-02 -- 2019-12-13
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Women's and children's health
Särskild behörighet : None.
Kursens syfte : The purpose of the course is to impart knowledge and practical experience in scientific writing, based on own research, including manuscript, abstract and cover letter writing and scientific poster design.
Kursens lärandemål : AFTER ATTENDING THE COURSE, THE DOCTORAL STUDENT SHOULD BE ABLE TO: - Explain the characteristics and disposition of different written presentation media and decide which forum is the most suitable for a specific text - Understand, and apply, the terminology associated with scientific writing - Write an abstract - Use the correct structure and language to compose a scientific paper, following the editorial requirements - Revise a manuscript according to a checklist with the most common language and structure mistakes in scientific writing - Use the focus points in a scientific paper (where the readers focus their reading) - Identify the main scope and focus of the research and summarize information aligned to the target group - Apply the structure of popular science writing and use popular science as a tool for presentations - Give a poster presentation - Design a scientific poster and reflect upon structure, language and style - Understand the ethics in publication - Use the software EndNote for reference management - Search for references in databases (e.g. PubMed) and decide what sources are reliable - Respond to the reviewer's comments - Write a cover letter - Reflect on own development as a writer of different texts during the course
Kursens innehåll : THE MAIN SCOPE OF THE COURSE is how to write about research in different contexts and forums. THE CONTENT OF THE COURSE: 1. Terminology associated to scientific writing 2. Designing and writing a) a poster b) an abstract c) a draft for a research paper d) a cover letter e) a reply to the reviewer´s comments f) a cover letter g) a popular science paper 3. The writing process: structure, language, style 4. Editorial requirements of different journals 5. Summarizing and presenting information aiming at the target audience 6. Identifying the main scope of a research project 7. References and reference management (EndNote software) 8. Data base search 9. Basic rhetoric for poster presentations 10. References 11. Ethics in publication
Arbetsformer : Lectures, seminares, writing exercises, group assignments and practical exercises. As part of the learning process, the Ph.D students will be members of in-class review groups, giving feed-back to their colleagues.
Examination : 1) Written assignments reflecting the intended learning outcomes of the course: draft for scientific paper, popular science paper, poster, cover letter, and abstract. All assignments can be based on own research (if applicable). 2) Evaluation sessions, where the PhD students give each other feed back on the written assignments as a part of the learning process 3) Poster presentation, where the PhD students present their posters to a small group of course participants (there are no presentations in front of a larger group)
Obligatoriska moment : Lectures, workshops, evaluation sessions, and group assignments as well as all written assignments. Absence can be compensated: a) during next course occasion b) individual assignments
Antal studenter : 18 - 22
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to LATER registration date).
Övrig information : Welcome to apply for PhD course "Write your research results and get them published"!

 The course focuses on scientific writing (manuscript, abstract and poster) and you will be writing about your own research (but there is no requirement to bring data of your own in order to benefit from the course) to maximize the learning experience and also to make actual progress in your studies. The course includes manuscript writing, poster design and presentation, cover letter writing, abstract writing and popular science writing. The popular science part is covering the skills you need in order to successfully write a popular science summary for e.g. a project plan or to apply for grants and is also helpful for oral presentations. No prior knowledge or experience in scientific writing is required to attend the course, but you will benefit equally from the course if you have published your research before.

 The course will be given in a venue in the Old Town in Stockholm. Please address ALL questions to: anna.wachtmeister@ki.se or phone: 0707890607

Kursansvarig :
Anna Hildenbrand Wachtmeister
Institutionen för kvinnors och barns hälsa
070-789 06 07
Anna.Hildenbrand.Wachtmeister@ki.se

Kontaktpersoner :
Anna Hildenbrand Wachtmeister
Institutionen för kvinnors och barns hälsa
070-789 06 07
Anna.Hildenbrand.Wachtmeister@ki.se

Lalit Kumar
Institutionen för kvinnors och barns hälsa

Lalit.Kumar@ki.se

Title : Write your research results and get them published

Kursnummer : 2618
Antal högskolepoäng : 3.0
Datum : 2019-09-30 -- 2019-10-11
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Women's and children's health
Särskild behörighet : None.
Kursens syfte : The purpose of the course is to impart knowledge and practical experience in scientific writing, based on own research, including manuscript, abstract and cover letter writing and scientific poster design.
Kursens lärandemål : AFTER ATTENDING THE COURSE, THE DOCTORAL STUDENT SHOULD BE ABLE TO: - Explain the characteristics and disposition of different written presentation media and decide which forum is the most suitable for a specific text - Understand, and apply, the terminology associated with scientific writing - Write an abstract - Use the correct structure and language to compose a scientific paper, following the editorial requirements - Revise a manuscript according to a checklist with the most common language and structure mistakes in scientific writing - Use the focus points in a scientific paper (where the readers focus their reading) - Identify the main scope and focus of the research and summarize information aligned to the target group - Apply the structure of popular science writing and use popular science as a tool for presentations - Give a poster presentation - Design a scientific poster and reflect upon structure, language and style - Understand the ethics in publication - Use the software EndNote for reference management - Search for references in databases (e.g. PubMed) and decide what sources are reliable - Respond to the reviewer's comments - Write a cover letter - Reflect on own development as a writer of different texts during the course
Kursens innehåll : THE MAIN SCOPE OF THE COURSE is how to write about research in different contexts and forums. THE CONTENT OF THE COURSE: 1. Terminology associated to scientific writing 2. Designing and writing a) a poster b) an abstract c) a draft for a research paper d) a cover letter e) a reply to the reviewer´s comments f) a cover letter g) a popular science paper 3. The writing process: structure, language, style 4. Editorial requirements of different journals 5. Summarizing and presenting information aiming at the target audience 6. Identifying the main scope of a research project 7. References and reference management (EndNote software) 8. Data base search 9. Basic rhetoric for poster presentations 10. References 11. Ethics in publication
Arbetsformer : Lectures, seminares, writing exercises, group assignments and practical exercises. As part of the learning process, the Ph.D students will be members of in-class review groups, giving feed-back to their colleagues.
Examination : 1) Written assignments reflecting the intended learning outcomes of the course: draft for scientific paper, popular science paper, poster, cover letter, and abstract. All assignments can be based on own research (if applicable). 2) Evaluation sessions, where the PhD students give each other feed back on the written assignments as a part of the learning process 3) Poster presentation, where the PhD students present their posters to a small group of course participants (there are no presentations in front of a larger group)
Obligatoriska moment : Lectures, workshops, evaluation sessions, and group assignments as well as all written assignments. Absence can be compensated: a) during next course occasion b) individual assignments
Antal studenter : 18 - 22
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to LATER registration date).
Övrig information : Welcome to apply for PhD course "Write your research results and get them published"!

 The course focuses on scientific writing (manuscript, abstract and poster) and you will be writing about your own research (but there is no requirement to bring data of your own in order to benefit from the course) to maximize the learning experience and also to make actual progress in your studies. The course includes manuscript writing, poster design and presentation, cover letter writing, abstract writing and popular science writing. The popular science part is covering the skills you need in order to successfully write a popular science summary for e.g. a project plan or to apply for grants and is also helpful for oral presentations. No prior knowledge or experience in scientific writing is required to attend the course, but you will benefit equally from the course if you have published your research before.

 The course will be given in a venue in the Old Town in Stockholm. Please address ALL questions to: anna.wachtmeister@ki.se or phone: 0707890607

Kursansvarig :
Anna Hildenbrand Wachtmeister
Institutionen för kvinnors och barns hälsa
070-789 06 07
Anna.Hildenbrand.Wachtmeister@ki.se

Kontaktpersoner :
Anna Hildenbrand Wachtmeister
Institutionen för kvinnors och barns hälsa
070-789 06 07
Anna.Hildenbrand.Wachtmeister@ki.se

Lalit Kumar
Institutionen för kvinnors och barns hälsa

Lalit.Kumar@ki.se

Title : Brain circuits

Kursnummer : 2624
Antal högskolepoäng : 1.5
Datum : 2019-09-16 -- 2019-09-20
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Neuroscience
Särskild behörighet :
Kursens syfte : The purpose of the course is to provide doctoral students in the field of neuroscience with an overview of current state-of-the art approaches, technologies and concepts used for understanding of the brain's circuits and functions in animal models. All invited speakers have made seminal contributions to how we currently study and understand the brain, and there will be ample opportunities for the students to interact with the speakers, and discuss aspects relevant to their own work.
Kursens lärandemål : By the end of the course the student shall be able to: - explain the structure and function of the main brain circuits, - describe the principles for excitatory and inhibitory networks, including receptors and neurotransmitters, as well as the action of different chemical neuromodulators, - describe principles, use and readout of optogenetics and recording technologies, - describe principles and methods to define the structure (neuroanatomy) of brain circuits, - explain how dysfunctions of networks can manifest as neuropsychiatric disorders, - describe animal behavior tests probing specific networks and network functions.
Kursens innehåll : The course will cover the organization and function of main circuits in the brain, including the interaction and participation of different cell types, the interplay between excitation and inhibition, and how circuit output results in behavior. Different techniques for recording, labeling and manipulation of neuronal circuits in animal models will be discussed, including electrophysiology, molecular targeting, optogenetics and viral tracing. The connection between deficient circuit functions and neuropsychiatric disorders will be included, as well as animal behavior tests probing specific circuits and circuit (dys)functions. Specific emphasis will be put into describing the technologies currently used in the neuroscience field.
Arbetsformer : Lectures by invited experts and group exercises.
Examination : The student should in discussions and a seminar presentation demonstrate the ability to critically evaluate original research papers on the topics covered and be able to show that the intended learning outcomes for the course are reached.
Obligatoriska moment : The seminar presentations are obligatory, and so are all lectures. Any absence has to be compensated for in accordance with the instructions of the course director.
Antal studenter : 12 - 24
Urval av studenter : We welcome highly motivated applicants from all areas of neuroscience. Knowledge of how neurons function and of brain anatomy is a prerequisite. Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project according to the written motivation in the application, 2) experience of neuroscience research as stated in the written motivation, 3) date for registration as a PhD student (priority given to earlier reg. date).
Övrig information : The course will be given at Karolinska Institutet, campus Solna. Time: 9.00-17.00 (Monday to Friday). Lectures will be given by international and national scientists who have made significant contributions to their respective field, including development or application of novel technologies. We have a strong emphasis on young scientists, and rodent basic neuroscience studies. Confirmed teachers: David Dupret (Oxford University), Jonathan Whitlock (NTNU, Trondheim), Koen Vervaeke (Oslo University), Marie Carlén (KI), Gilad Silberberg (KI), and more to come. For updated information regarding the course, see carlenlab.org

---

Kursansvarig :
Marie Carlen
Institutionen för neurovetenskap
08-52483043
Marie.Carlen@ki.se

Kontaktpersoner :
Dinos Meletis
Institutionen för neurovetenskap

Dinos.Meletis@ki.se

Title : Neurodegenerative disorders I - From molecule to treatment

Kursnummer : 2629
Antal högskolepoäng : 1.5
Datum : 2019-09-30 -- 2019-10-04
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Neurobiology, Care Sciences and Society
Särskild behörighet :
Kursens syfte : The purpose of the course is to introduce clinical aspects and molecular mechanisms in the most common neurodegenerative disorders and to use this knowledge to prepare and present oral presentations as well as ask and answer questions. The course will also allow interaction between PhD-students with master students in their second year, both with a special interest in neuroscience. A potential purpose for students attending all 6 courses given in sequence (Frontiers Courses in Neuroscience) is also to place Neurodegenerative disorders in a greater research context.
Kursens lärandemål : The student should after the course: 1) understand cellular processes and molecular mechanisms of neurodegeneration 2) understand mechanisms of protein turnover, degradation and aggregation 3) based on knowledge of these mechanisms critically be able to evaluate the concept of conformational disorders and its relevance to the different neurodegenerative disorders 4) have achieved basic knowledge about epidemiology, symptoms, pathology and current treatments of the most common neurodegenerative disorders such as Alzheimers disease, Parkinsons disease, amyotrophic lateral sclerosis and multiple sclerosis. 5) In addition, the student should understand how the pathology of these disorders is reflected in their symptoms. 6) Based on this understanding, the student should be able to discuss the effects of treatments, if they are (or may be) symptomatic or curative. 7) Be able to evaluate the relevance of different disease models, their advantages and limitations with respect to the clinical picture and to what is known about disease mechanisms.
Kursens innehåll : The course will cover topics related to the degeneration of neural cells, apoptosis and necrosis as well as the cellular and biochemical reactions to neuronal injury. During the course we will also present and discuss symptoms, diagnosis, pathology, epidemiology, genetics and treatment of the most common neurodegenerative disorders such as Alzheimers disease, Parkinsons disease, amyotrophic lateral sclerosis and multiple sclerosis. Molecular mechanisms of current and future treatment strategies, disease models and their potential will be presented and discussed. In addition, the students may within group assignments study less common neurodegenerative diseases such as frontotemporal dementia, Lewy body disease, ataxias, prion diseases as well as vascular, inflammatory or trauma related causes of neurodegeneration such as stroke, epilepsy or trauma.
Arbetsformer : The course runs day time for 1 week full-time with lectures by invited scientists, literature seminars as group assignments, and individual studies.
Examination : The examination part includes: the group assignments, short formative examination questions at the end of day during the course week, the oral presentations by the students and the following general discussion between all participants. All students are individually assessed.
Obligatoriska moment : The group assignments, the oral presentations by the students and the following general discussion between all participants are compulsory. Students that are absent from these parts will have to individually submit a written presentation of the subject.
Antal studenter : 10 - 25
Urval av studenter : If selection of course participants is necessary, we will prioritize 1) students for whom the course is mandatory, 2) students with an educational plan encompassing the topics of the course, and 3) PhD-students with an early registration date and close to finalizing the doctoral studies.
Övrig information : The course will be held at Karolinska Institutet, Solna

---

Kursansvarig :
Elisabet Åkesson
Institutionen för neurobiologi, vårdvetenskap och samhälle
08-585 838 92
Elisabet.Akesson@ki.se

Kontaktpersoner :
Helena Karlström
Institutionen för neurobiologi, vårdvetenskap och samhälle
08-585 837 77
Helena.Karlstrom@ki.se

Maria Roos
Institutionen för neurobiologi, vårdvetenskap och samhälle
0858585417
Maria.Roos@ki.se

Title : Human physiology - an overview

Kursnummer : 2644
Antal högskolepoäng : 3.0
Datum : 2019-09-23 -- 2019-10-04
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Physiology and Pharmacology
Särskild behörighet :
Kursens syfte : KI is a medical university with research and education in medicine and health. All PhD students have to obtain basic knowledge regarding the human body in health and disease in case they lack basic higher education knowledge in the field of medicine. The aim of the course is to give PhD students without a medical background a basic overview and introduction to human physiology. The students will gain a basic understanding of how the human organ systems function and interact under normal conditions. The content covered in this course will be useful for further studies where knowledge about human biology is of value.
Kursens lärandemål : After completing the course, the student will gain a basic understanding of how the human organ systems function and interact under normal conditions. The content covered in this course will be useful for further studies where knowledge about human biology is of value. More specifically, the student will be able to: - Demonstrate knowledge and understanding of basic functions and interactions between organ systems in the human body. - Demonstrate a critical and scientific approach to literature sources for the different course tasks.
Kursens innehåll : - Overview of cellular and integrative physiology - Basic anatomy - Biochemistry and cell biology - Nervous system - Endocrinology - Digestive system - Cardiovascular physiology - Renal physiology - Respiration - Basic immunology
Arbetsformer : Different learning methods such as problem based learning, lectures and a hands-on human lab session will be used. Full time during two consecutive weeks.
Examination : To pass the course, the student must demonstrate that the learning outcomes have been achieved. Oral and written examinations are used for student assessment.
Obligatoriska moment : Examinations and the hands-on human lab are required. Students that are absent during the quiz or the lab must perform a make-up quiz/lab. Students that are absent from the exam or do not obtain a passing grade in the first examination will be offered a second examination.
Antal studenter : 20 - 24
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : The course runs daytime at Karolinska Institutet campus Solna.

Kursansvarig :
Jessica Norrbom
Institutionen för fysiologi och farmakologi

Jessica.Norrbom@ki.se

Kontaktpersoner :
-

Title : Practical approaches to qualitative research - based on blended learning

Kursnummer : 2674
Antal högskolepoäng : 7.5
Datum : 2019-08-26 -- 2019-11-15
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Public Health Sciences
Särskild behörighet : None
Kursens syfte : Qualitative research is a powerful widely used methodology that allows researchers to understand why and how an event occurs in a given context. However, many health scientists are unfamiliar with theories and methods used in qualitative research. This course will contribute to fill this knowledge gap by providing the participants with practical skills to design, conduct, analyze and report qualitative studies.
Kursens lärandemål : - Design a qualitative study including selecting the appropriate sampling procedure and data collection methods. - Develop the data instruments including interview/focus groups discussions guides and observation protocols. - Conduct the fieldwork. - Analyze the data. - Write up the findings. - Critically discuss others' qualitative research, e.g. described in research proposals and manuscripts.
Kursens innehåll : - Background on qualitative methodology. - Theory of qualitative research. - Sampling in qualitative research. - Designing an interview/discussion guide. - Ethical considerations in qualitative research. - Writing a research protocol. - Data collection methods (in-depth interviews, focus groups discussions and observation). - Alternative methods of data collection. - Analysis of qualitative data. - Trustworthiness and validity. - Other approaches to interpretation: Phenomenology, narrative research, oral history. - Qualitative research in evaluation. - Critical review of literature. - Ongoing development as qualitative researcher.
Arbetsformer : The course will be taught with a blended learning approach, which will combine self-study and face-to-face practical training sessions. Students will be able to access course materials and interact with each other through a common e-learning platform. Practical sessions will be conducted face-to-face where a theoretical and practical training will be provided in the three dominant qualitative data collection methods, including discussion of examples used in studies. In addition, the students will conduct individual assignments that will allow them to improve their skills.
Examination : Four assignments are to be done during the course. The first three assignments will take the students through a full mini research project. The first assignment will be to write a qualitative research protocol, the second to conduct two individual depth interviews and transcribe these and the third to analyze the interview transcripts. The fourth assignment will be to write a critical review of a published qualitative paper. There will be a written examination at the end of the course, which will be emailed to the students to be returned within 48 hours. In order to obtain a pass for the whole course, students must obtain a pass in the four assignments and in the written examination.
Obligatoriska moment : Participation in practical sessions, on-line lectures and discussions is compulsory. Non-participation will result in additional assignments at the discretion of the course tutor.
Antal studenter : 8 - 15
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : Most activities and lectures are online. A week of face-to-face practical training on qualitative data collection will be held from September 30th to October 4th 2019.

Kursansvarig :
Mariano Salazar
Institutionen för folkhälsovetenskap

mariano.salazar@ki.se

Kontaktpersoner :
Mariano Salazar
Institutionen för folkhälsovetenskap

mariano.salazar@ki.se

Title : Multi-Disciplinary Perspectives on Active Ageing Research

Kursnummer : 2688
Antal högskolepoäng : 4.5
Datum : 2019-09-16 -- 2019-11-29
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Neurobiology, Care Sciences and Society
Särskild behörighet :
Kursens syfte : The purpose of the course is to enable the students to develop an in-depth knowledge of theoretical and methodological challenges in ageing research and to analyse research questions within a framework of different ageing theories with a multi-disciplinary perspective.
Kursens lärandemål : The students shall be able to: Theorize on complexity of research directed towards older people, and reflect on methodological challenges in ageing research Analyse research on ageing from a multi-disciplinary perspective within the framework of different ageing theories Critically judge and hypothesize on research questions within the field of ageing from different disciplinary viewpoints
Kursens innehåll : To reach the intended learning outcomes, the course will be built on the research projects of the students involved. Definitions and concepts relevant for the focus of those projects will be penetrated to make students aware of their own frame of reference and of the theory that forms a base for their research design. The course will include an overview of current ageing research issues within different professional and scientific domains in health, covering health promotion, prevention of disease and disability, rehabilitation and preservation of function. A focus on a persons resources for developing an active life, and their possible implications in research will be analysed.
Arbetsformer : Lectures, seminars, group work, study of and group discussions on scientific literature and individual work based on each student's research project.
Examination : The students will be examined with a written assignment related to the student's research project. The paper will be presented and discussed at a pre-seminar. The paper shall include an ageing theory on the student's research project and reflections of stregths and weaknesses.The paper should include an attempt to apply a multi-disciplinary approach on the project.
Obligatoriska moment : Active participation in the seminars, which are mandatory. Absence from a seminar must be compensated by means of a written task, suggested by the course leader.
Antal studenter : 12 - 20
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : Mandatory lectures and seminars: September 16 and 17, October 17 and November 7. Group assignment (distance or physical): September 30 and October 9. Address: Alfred Nobels Allé 23, Campus Flemingsberg

---

Kursansvarig :
Elisabeth Rydwik
Institutionen för neurobiologi, vårdvetenskap och samhälle

elisabeth.rydwik@ki.se

Kontaktpersoner :
Indu Kadlac
Institutionen för neurobiologi, vårdvetenskap och samhälle

indu.kadlac@ki.se

Elisabeth Rydwik
Institutionen för neurobiologi, vårdvetenskap och samhälle

elisabeth.rydwik@ki.se

Title : Basic Laboratory Safety

Kursnummer : 2690
Antal högskolepoäng : 1.8
Datum : 2019-09-30 -- 2019-10-07
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Microbiology, Tumor and Cell Biology
Särskild behörighet : Experience of and/or education in laboratory work
Kursens syfte : The purpose of the course is to give the students an understanding of risks and of principles in safety measures in the medical science laboratory, as well as a consciousness about general and individual responsibilities for the planning and execution of applicable safety measures. The purpose is also to develop skills in performing risk analyses and writing up risk assessments.
Kursens lärandemål : After successfully completing this course you as a student should be able to evaluate the risks associated with experiments in the laboratory. The hazards could originate from chemicals, microbiological agents, cell cultures and human blood/tissues. You should also be able to identify the needs for suitable personal protective equipment, routines for waste management and transport. In addition, you should be familiar with the regulatory framework that governs these topics, the basic needs of a safe laboratory, and be able to identify the chain of responsibilities.
Kursens innehåll : The course aims at giving theoretical and practical knowledge on chemical and biological aspects of laboratory safety. Topics will deal with writing risk assessments, chemical health risks including allergy, cancer and flammable agents, handling and storage of dangerous chemicals, handling of microorganisms and cell cultures including human blood and tissue samples, laboratory acquired infections, bio-safety measures including personal protection devices, ventilated workplaces, genetically modified microorganisms, bio-security and dual use, transport of dangerous goods and waste management.
Arbetsformer : The information will be given as lectures, group discussions, practical sessions, web-tutorials and computer sessions during a total of six days.
Examination : The examination is based on an individual written examination, a risk assessment and the active participation and contributions in a group presentation. One needs to pass each of these three assessments in order to pass the course.
Obligatoriska moment : Presence during some of the course activities, marked in the schedule, is compulsory. Students cannot compensate for absence during compulsory activities, but are referred to coming courses for these activities.
Antal studenter : 30 - 40
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : It is recommended to take the course in the beginning of the doctoral education.

Kursansvarig :
Maria Johansson
Institutionen för mikrobiologi, tumör- och cellbiologi

Maria.Johansson@ki.se

Kontaktpersoner :
Annika Carlsson
Institutionen för mikrobiologi, tumör- och cellbiologi

annika.carlsson@ki.se

Title : Occupational Science conceptual development and application on research

Kursnummer : 2702
Antal högskolepoäng : 3.0
Datum : 2019-09-30 -- 2019-11-22
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Neurobiology, Care Sciences and Society
Särskild behörighet : Students should have knowledge in models of practice in occupational therapy
Kursens syfte : The purpose of the course is to develop theoretical and conceptual understanding on occupational science including how theories and concepts within the discipline can be applied to a specific research-question or research-area. In-depth knowledge also includes development of critical thinking in application of theories and knowledge short-coming and possible development of further understanding.
Kursens lärandemål : Following the course, participants will be able to: - develop in-depth knowledge on the development of the discipline of occupational science, with focus on the development of ideas, positioning in the knowledge society and epistemological base, - reflect on conceptual questions within occupational science and its relation to other health-related concepts, including relationship to clinical- or research practice, - apply an occupational perspective on a research question or a research area on individual, contextual and societal level and discuss similarities and differences to other perspectives. - reflect on the strengths and weaknesses of a fellow students application of an occupational perspective
Kursens innehåll : The content of the course regards discussions about the historical roots of the ideas of occupational science and the discipline in relation to the professional application in occupational therapy. Contemporary discussions about central concepts and focuses on individual and societal level will be reviewed in the course. Connecting own research to areas and concepts within the occupational perspective will be central in the course
Arbetsformer : The course is a part-time distance course that uses streamed lectures to introduce the course and each of the learning outcomes. This is combined with on-line discussions and 3 group-based on-line seminars that students prepare beforehand and discuss aspects and problem in relation to each of the learning outcomes. The final examination seminar presents and discusses individual papers focusing on application of OS to a research question. Respondent and opponent-roles will be used.
Examination : The examination will be based on the following: - participating in seminar with reflections on the development of ideas in relation to own experience clinically and or in research including comments on others in the seminar, - participating in seminar with reflections on a central concept in the discipline including comments on others in the seminar, - a written assignment of 4-6 pages in which the student by using relevant concepts should apply an occupational perspective on a research question or a research area on individual, contextual and societal level. - an oral presentation of the assignment and performance in the role of opponent reflecting on a fellow students paper.
Obligatoriska moment : All lectures are compulsory as well as the group-based and the individual based seminar. Absence will be compensated with an individual discussion paper about the topic that has been missed.
Antal studenter : 8 - 14
Urval av studenter : Selection of students will be made from a short motivation letter on how this course is planned to support the specific research-project of the students.
Övrig information : The course is an online course (starting September 30) with no physical meetings. Webb-based examination seminars is planned November 21 and November 22 (students choice of one date).

Kursansvarig :
Hans Jonsson
Institutionen för neurobiologi, vårdvetenskap och samhälle

Hans.Jonsson@ki.se

Division of Occupational Therapy
Fack 23200
SE-141 83
Huddinge

Kontaktpersoner :
-

Title : Intermediate Medical Statistics: Regression models

Kursnummer : 2738
Antal högskolepoäng : 3.0
Datum : 2019-11-11 -- 2019-11-22
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Learning, Informatics, Management and Ethics
Särskild behörighet : Basic Medical Statistics (or equivalent)
Kursens syfte : The aim of the course is to introduce intermediate statistical methods and to facilitate acquirement of skills that involve hands-on data analysis using statistical software.
Kursens lärandemål : After successfully completing this course students are expected to be able to: Understand the basic theory behind the statistical methods introduced in the course and to evaluate their applicability and limitations. Choose a suitable statistical model for assessing a specific research hypothesis using data from a medical science study, evaluate the fit of the model, and interpret the results. Apply the methods discussed in the course on real data.
Kursens innehåll : The course is an introduction to more advanced statistical methods and requires that the student is familiar with the statistical concepts of descriptive and inferential statistics, and has some basic knowledge of linear regression. The course covers intermediate regression analysis, one-way and two-way analysis of variance, repeated measures ANOVA, logistic regression, and introduction to survival analysis. Concepts examined in this course include dummy variables, confounding variables, interaction between variables, influential observations and model selection.
Arbetsformer : The course consists of lectures, group discussions and assignments solved individually and in groups. Some group discussions and exercises are compulsory.
Examination : Assessment of the intended learning outcomes by a passing grade on the computer based exercises, and active participation in the final seminar and article presentations.
Obligatoriska moment : Computer based exercises, seminars, article presentations and some lectures are mandatory. The course leader assesses whether and if so, how absence can be compensated.
Antal studenter : 18 - 20
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date).
Övrig information : The course will consist of three or four scheduled whole days per week for two weeks. Course dates are: November 11, 12, 14, 15, 18, 19, 21 and 22.

Kursansvarig :
Mesfin Tessma
Institutionen för lärande, informatik, management och etik

Mesfin.Tessma@ki.se

Kontaktpersoner :
Elisabeth Löfgren
Institutionen för lärande, informatik, management och etik

elisabeth.lofgren@ki.se

Title : The developing brain

Kursnummer : 2780
Antal högskolepoäng : 1.5
Datum : 2019-09-02 -- 2019-09-06
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Medical Biochemistry and Biophysics
Särskild behörighet :
Kursens syfte : Developmental biology lies at the heart of an effort to understanding complex biological systems. By studying how neural circuits are assembled we can extrapolate key aspects of their function as well as devise strategies for their repair. This course is given to deepen the understanding of how molecular and cellular mechanisms underlie neurobiological function and to widen the horizon of students within the strong Karolinska neuroscience community.
Kursens lärandemål : By the end of the course the student shall be able to describe the major steps contributing to the development of the nervous system and transfer new knowledge acquired in the course into their specific projects or fields of research.
Kursens innehåll : The course will cover the main steps of development from neural stem cells to mature circuits, including the patterning of the neural plate and thus the origin of cell types, the interplay between intrinsic and extrinsic factors, gene regulation including epigenetics, neuro-glia interactions and the role of network activity in shaping the final circuits. Different molecular and tracing technologies, and model organisms will be covered. An important aspect of the course regards molecular technologies for labeling, transcriptional analysis and genetic manipulation of defined neural populations. Connections between aberrant developmental processes and neurological disorders will be discussed.
Arbetsformer : Lectures by invited international experts, group work and seminar presentations.
Examination : The students should demonstrate their knowledge about the intended learning outcomes stated above including reflect on which aspects are relevant for their own research in a seminar presentation and in discussions.
Obligatoriska moment : All lectures and the seminar presentation (examination) are compulsory.
Antal studenter : 10 - 25
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : This course is a full-time course and will be held at Campus Solna. The schedule with all details will be sent out after acceptance to the course.

Kursansvarig :
Jens Hjerling-Leffler
Institutionen för medicinsk biokemi och biofysik

jens.hjerling-leffler@ki.se

Kontaktpersoner :
Francois Lallemend
Institutionen för neurovetenskap

francois.lallemend@ki.se

Goncalo Castelo-Branco
Institutionen för medicinsk biokemi och biofysik

Goncalo.Castelo-Branco@ki.se

Ulrika Marklund
Institutionen för medicinsk biokemi och biofysik

Ulrika.Marklund@ki.se

Title : Present your research!

Kursnummer : 2787
Antal högskolepoäng : 1.5
Datum : 2019-11-25 -- 2019-11-29
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Women's and children's health
Särskild behörighet : None
Kursens syfte : The purpose of the course is to enable doctoral students to obtain knowledge and practical experience in presenting own research orally; adapted to different presentation formats, target groups, supporting media and situations, as well as to reflect on the development of own presentation skills.
Kursens lärandemål : After attending the course, the doctoral student should: 1. Be able to design an oral presentation in an asequate way. 2. Be able to design and use supportive media for a successful presentation. 3. Know the basics of presentation techniques and rethoric. 4. Have gained knowledge on how to interact with the audience.
Kursens innehåll : The scope of the course is to design and give oral presentations of your research results in different contexts. The main content of the course: 1. DESIGN AND DISPOSITION OF AN ORAL PRESENTATION (e.g. poster presentation, short presentation of research results): a. Goals and aims b. Structure c. Simplifications to enhance understanding d. Choice of pictures e. Language f. Time management 2. PRESENTATION TECHNIQUES AND RHETORIC FOR ORAL PRESENTATIONS: a. Body language and posture b. Language and pace c. How to prepare yourself for a presentation d. How to remember what you want to present e. Building confidence (be less nervous) to present f. What to avoid doing during a presentation g. How to deal with questions from the audience 3. DESIGN AND USE OF SUPPORTING MEDIA FOR A PRESENTATION: a. Power Point slides including introduction to power point b. Scientific poster c. Flipchart and other supporting media 4. INTERACTION WITH THE AUDIENCE: a. Catching the audience's attention b. How to address the audience c. Keeping the audience's attention for a longer period of time d. Communicating with the audience e. How to make the audience trust you f. Preparing the presentation with different audiences in mind g. Different learning styles which influences the audience's attention h. How to impress your audience i. Attention curve of the audience j. How to ease the learning of the audience 5. PRACTICAL EXERCISES: a. Presenting in front of an audience: i. Poster presentation ii. Presentation of student's choice iii. Elevator Pitch iv. Power point presentation v. Video recording of presentation with feedback b. Presentation exercises in pairs or small groups c. Presenting to different audiences d. Body language e. Language and pace f. How to use your audience as an asset g. How to interact with your audience h. How to remember your presentation i. Give and receive feedback on presentations j. Deal with nervousness and stay focused on your presentation
Arbetsformer : Lectures, written assignments, workshops, coaching, filming, group work, and practical exercises in groups and with a learning peer.
Examination : Formative assessment during active participation in all parts of the course Summative assessment of a. Poster presentation including scientific poster, b. Power Point presentation c. Elevator pitch
Obligatoriska moment : Three complete presentations (designed and presented to the class): a. Poster presentation including a scientific poster b. Power Point presentation c. Elevator Pitch d. Giving feed back on the other students' presentations e. Reflecting on own learning and development during the course
Antal studenter : 18 - 22
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : Welcome to apply for the doctoral course Present your research!

 The course focuses on research presentations in different contexts. You will practice presenting your own research results (or something else of your choice from your research area) as well as other topics in order to approach presentation skills from different angles. The course is highly interactive with a lot of exercises and together we will take your presentations to the next level. We will also deal with nervousness and a variety of other challenges you might be facing when presenting. The teachers focus on the individual students and make a great effort to create an environment, where the students feel safe to practice and try new presentation approaches.

 Quotes from former students (from the course evaluations):

 "It is not clear from the course description how amazing the course really is! So the description is very modest, in reality the course is life changing - best I have ever taken and it makes a difference."

 "Great course! How to dealing with stress was the most important part of the course when presenting. Worth taking!"

 "Everything was excellent. I am so grateful.I will bring it with me in the future. It early changed my way of thinking. All the feedback and filming was great. Thank you so very much!"

 The teachers are Anna Hildenbrand Wachtmeister (Ph.D.) and Ken Michelman (actor and teacher in public speaking and presentation skills) or Ulf Sandström (coach and teacher in presenation skills). The course will be given in a venue in the Old Town in Stockholm. Please address ALL questions to: anna.wachtmeister@ki.se or phone: 0707890607

Kursansvarig :
Kristina Gemzell Danielsson
Institutionen för kvinnors och barns hälsa
0851772128

Kristina.Gemzell@ki.se

Kontaktpersoner :
Anna Hildenbrand Wachtmeister
Institutionen för kvinnors och barns hälsa
070-789 06 07
Anna.Hildenbrand.Wachtmeister@ki.se

Title : Present your research!

Kursnummer : 2787
Antal högskolepoäng : 1.5
Datum : 2019-08-26 -- 2019-08-30
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Women's and children's health
Särskild behörighet : None
Kursens syfte : The purpose of the course is to enable doctoral students to obtain knowledge and practical experience in presenting own research orally; adapted to different presentation formats, target groups, supporting media and situations, as well as to reflect on the development of own presentation skills.
Kursens lärandemål : After attending the course, the doctoral student should: 1. Be able to design an oral presentation in an asequate way. 2. Be able to design and use supportive media for a successful presentation. 3. Know the basics of presentation techniques and rethoric. 4. Have gained knowledge on how to interact with the audience.
Kursens innehåll : The scope of the course is to design and give oral presentations of your research results in different contexts. The main content of the course: 1. DESIGN AND DISPOSITION OF AN ORAL PRESENTATION (e.g. poster presentation, short presentation of research results): a. Goals and aims b. Structure c. Simplifications to enhance understanding d. Choice of pictures e. Language f. Time management 2. PRESENTATION TECHNIQUES AND RHETORIC FOR ORAL PRESENTATIONS: a. Body language and posture b. Language and pace c. How to prepare yourself for a presentation d. How to remember what you want to present e. Building confidence (be less nervous) to present f. What to avoid doing during a presentation g. How to deal with questions from the audience 3. DESIGN AND USE OF SUPPORTING MEDIA FOR A PRESENTATION: a. Power Point slides including introduction to power point b. Scientific poster c. Flipchart and other supporting media 4. INTERACTION WITH THE AUDIENCE: a. Catching the audience's attention b. How to address the audience c. Keeping the audience's attention for a longer period of time d. Communicating with the audience e. How to make the audience trust you f. Preparing the presentation with different audiences in mind g. Different learning styles which influences the audience's attention h. How to impress your audience i. Attention curve of the audience j. How to ease the learning of the audience 5. PRACTICAL EXERCISES: a. Presenting in front of an audience: i. Poster presentation ii. Presentation of student's choice iii. Elevator Pitch iv. Power point presentation v. Video recording of presentation with feedback b. Presentation exercises in pairs or small groups c. Presenting to different audiences d. Body language e. Language and pace f. How to use your audience as an asset g. How to interact with your audience h. How to remember your presentation i. Give and receive feedback on presentations j. Deal with nervousness and stay focused on your presentation
Arbetsformer : Lectures, written assignments, workshops, coaching, filming, group work, and practical exercises in groups and with a learning peer.
Examination : Formative assessment during active participation in all parts of the course Summative assessment of a. Poster presentation including scientific poster, b. Power Point presentation c. Elevator pitch
Obligatoriska moment : Three complete presentations (designed and presented to the class): a. Poster presentation including a scientific poster b. Power Point presentation c. Elevator Pitch d. Giving feed back on the other students' presentations e. Reflecting on own learning and development during the course
Antal studenter : 18 - 24
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : Welcome to apply for the doctoral course Present your research!

 The course focuses on research presentations in different contexts. You will practice presenting your own research results (or something else of your choice from your research area) as well as other topics in order to approach presentation skills from different angles. The course is highly interactive with a lot of exercises and together we will take your presentations to the next level. We will also deal with nervousness and a variety of other challenges you might be facing when presenting. The teachers focus on the individual students and make a great effort to create an environment, where the students feel safe to practice and try new presentation approaches.

 Quotes from former students (from the course evaluations):

 "It is not clear from the course description how amazing the course really is! So the description is very modest, in reality the course is life changing - best I have ever taken and it makes a difference."

 "Great course! How to dealing with stress was the most important part of the course when presenting. Worth taking!"

 "Everything was excellent. I am so grateful.I will bring it with me in the future. It early changed my way of thinking. All the feedback and filming was great. Thank you so very much!"

 The teachers are Anna Hildenbrand Wachtmeister (Ph.D.) and Ken Michelman (actor and teacher in public speaking and presentation skills) or Ulf Sandström (coach and teacher in presenation skills). The course will be given in a venue in the Old Town in Stockholm. Please address ALL questions to: anna.wachtmeister@ki.se or phone: 0707890607

Kursansvarig :
Kristina Gemzell Danielsson
Institutionen för kvinnors och barns hälsa
0851772128

Kristina.Gemzell@ki.se

Kontaktpersoner :
Anna Hildenbrand Wachtmeister
Institutionen för kvinnors och barns hälsa
070-789 06 07
Anna.Hildenbrand.Wachtmeister@ki.se

Title : Present your research!

Kursnummer : 2787
Antal högskolepoäng : 1.5
Datum : 2019-10-28 -- 2019-11-01
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Women's and children's health
Särskild behörighet : None
Kursens syfte : The purpose of the course is to enable doctoral students to obtain knowledge and practical experience in presenting own research orally; adapted to different presentation formats, target groups, supporting media and situations, as well as to reflect on the development of own presentation skills.
Kursens lärandemål : After attending the course, the doctoral student should: 1. Be able to design an oral presentation in an asequate way. 2. Be able to design and use supportive media for a successful presentation. 3. Know the basics of presentation techniques and rethoric. 4. Have gained knowledge on how to interact with the audience.
Kursens innehåll : The scope of the course is to design and give oral presentations of your research results in different contexts. The main content of the course: 1. DESIGN AND DISPOSITION OF AN ORAL PRESENTATION (e.g. poster presentation, short presentation of research results): a. Goals and aims b. Structure c. Simplifications to enhance understanding d. Choice of pictures e. Language f. Time management 2. PRESENTATION TECHNIQUES AND RHETORIC FOR ORAL PRESENTATIONS: a. Body language and posture b. Language and pace c. How to prepare yourself for a presentation d. How to remember what you want to present e. Building confidence (be less nervous) to present f. What to avoid doing during a presentation g. How to deal with questions from the audience 3. DESIGN AND USE OF SUPPORTING MEDIA FOR A PRESENTATION: a. Power Point slides including introduction to power point b. Scientific poster c. Flipchart and other supporting media 4. INTERACTION WITH THE AUDIENCE: a. Catching the audience's attention b. How to address the audience c. Keeping the audience's attention for a longer period of time d. Communicating with the audience e. How to make the audience trust you f. Preparing the presentation with different audiences in mind g. Different learning styles which influences the audience's attention h. How to impress your audience i. Attention curve of the audience j. How to ease the learning of the audience 5. PRACTICAL EXERCISES: a. Presenting in front of an audience: i. Poster presentation ii. Presentation of student's choice iii. Elevator Pitch iv. Power point presentation v. Video recording of presentation with feedback b. Presentation exercises in pairs or small groups c. Presenting to different audiences d. Body language e. Language and pace f. How to use your audience as an asset g. How to interact with your audience h. How to remember your presentation i. Give and receive feedback on presentations j. Deal with nervousness and stay focused on your presentation
Arbetsformer : Lectures, written assignments, workshops, coaching, filming, group work, and practical exercises in groups and with a learning peer.
Examination : Formative assessment during active participation in all parts of the course Summative assessment of a. Poster presentation including scientific poster, b. Power Point presentation c. Elevator pitch
Obligatoriska moment : Three complete presentations (designed and presented to the class): a. Poster presentation including a scientific poster b. Power Point presentation c. Elevator Pitch d. Giving feed back on the other students' presentations e. Reflecting on own learning and development during the course
Antal studenter : 18 - 22
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : Welcome to apply for the doctoral course Present your research!

 The course focuses on research presentations in different contexts. You will practice presenting your own research results (or something else of your choice from your research area) as well as other topics in order to approach presentation skills from different angles. The course is highly interactive with a lot of exercises and together we will take your presentations to the next level. We will also deal with nervousness and a variety of other challenges you might be facing when presenting. The teachers focus on the individual students and make a great effort to create an environment, where the students feel safe to practice and try new presentation approaches.

 Quotes from former students (from the course evaluations):

 "It is not clear from the course description how amazing the course really is! So the description is very modest, in reality the course is life changing - best I have ever taken and it makes a difference."

 "Great course! How to dealing with stress was the most important part of the course when presenting. Worth taking!"

 "Everything was excellent. I am so grateful.I will bring it with me in the future. It early changed my way of thinking. All the feedback and filming was great. Thank you so very much!"

 The teachers are Anna Hildenbrand Wachtmeister (Ph.D.) and Ken Michelman (actor and teacher in public speaking and presentation skills) or Ulf Sandström (coach and teacher in presenation skills). The course will be given in a venue in the Old Town in Stockholm. Please address ALL questions to: anna.wachtmeister@ki.se or phone: 0707890607

Kursansvarig :
Kristina Gemzell Danielsson
Institutionen för kvinnors och barns hälsa
0851772128

Kristina.Gemzell@ki.se

Kontaktpersoner :
Anna Hildenbrand Wachtmeister
Institutionen för kvinnors och barns hälsa
070-789 06 07
Anna.Hildenbrand.Wachtmeister@ki.se

Title : Present your research!

Kursnummer : 2787
Antal högskolepoäng : 1.5
Datum : 2019-12-16 -- 2019-12-20
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Women's and children's health
Särskild behörighet : None
Kursens syfte : The purpose of the course is to enable doctoral students to obtain knowledge and practical experience in presenting own research orally; adapted to different presentation formats, target groups, supporting media and situations, as well as to reflect on the development of own presentation skills.
Kursens lärandemål : After attending the course, the doctoral student should: 1. Be able to design an oral presentation in an asequate way. 2. Be able to design and use supportive media for a successful presentation. 3. Know the basics of presentation techniques and rethoric. 4. Have gained knowledge on how to interact with the audience.
Kursens innehåll : The scope of the course is to design and give oral presentations of your research results in different contexts. The main content of the course: 1. DESIGN AND DISPOSITION OF AN ORAL PRESENTATION (e.g. poster presentation, short presentation of research results): a. Goals and aims b. Structure c. Simplifications to enhance understanding d. Choice of pictures e. Language f. Time management 2. PRESENTATION TECHNIQUES AND RHETORIC FOR ORAL PRESENTATIONS: a. Body language and posture b. Language and pace c. How to prepare yourself for a presentation d. How to remember what you want to present e. Building confidence (be less nervous) to present f. What to avoid doing during a presentation g. How to deal with questions from the audience 3. DESIGN AND USE OF SUPPORTING MEDIA FOR A PRESENTATION: a. Power Point slides including introduction to power point b. Scientific poster c. Flipchart and other supporting media 4. INTERACTION WITH THE AUDIENCE: a. Catching the audience's attention b. How to address the audience c. Keeping the audience's attention for a longer period of time d. Communicating with the audience e. How to make the audience trust you f. Preparing the presentation with different audiences in mind g. Different learning styles which influences the audience's attention h. How to impress your audience i. Attention curve of the audience j. How to ease the learning of the audience 5. PRACTICAL EXERCISES: a. Presenting in front of an audience: i. Poster presentation ii. Presentation of student's choice iii. Elevator Pitch iv. Power point presentation v. Video recording of presentation with feedback b. Presentation exercises in pairs or small groups c. Presenting to different audiences d. Body language e. Language and pace f. How to use your audience as an asset g. How to interact with your audience h. How to remember your presentation i. Give and receive feedback on presentations j. Deal with nervousness and stay focused on your presentation
Arbetsformer : Lectures, written assignments, workshops, coaching, filming, group work, and practical exercises in groups and with a learning peer.
Examination : Formative assessment during active participation in all parts of the course Summative assessment of a. Poster presentation including scientific poster, b. Power Point presentation c. Elevator pitch
Obligatoriska moment : Three complete presentations (designed and presented to the class): a. Poster presentation including a scientific poster b. Power Point presentation c. Elevator Pitch d. Giving feed back on the other students' presentations e. Reflecting on own learning and development during the course
Antal studenter : 18 - 22
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : Welcome to apply for the doctoral course Present your research!

 The course focuses on research presentations in different contexts. You will practice presenting your own research results (or something else of your choice from your research area) as well as other topics in order to approach presentation skills from different angles. The course is highly interactive with a lot of exercises and together we will take your presentations to the next level. We will also deal with nervousness and a variety of other challenges you might be facing when presenting. The teachers focus on the individual students and make a great effort to create an environment, where the students feel safe to practice and try new presentation approaches.

 Quotes from former students (from the course evaluations):

 "It is not clear from the course description how amazing the course really is! So the description is very modest, in reality the course is life changing - best I have ever taken and it makes a difference."

 "Great course! How to dealing with stress was the most important part of the course when presenting. Worth taking!"

 "Everything was excellent. I am so grateful.I will bring it with me in the future. It early changed my way of thinking. All the feedback and filming was great. Thank you so very much!"

 The teachers are Anna Hildenbrand Wachtmeister (Ph.D.) and Ken Michelman (actor and teacher in public speaking and presentation skills) or Ulf Sandström (coach and teacher in presenation skills). The course will be given in a venue in the Old Town in Stockholm. Please address ALL questions to: anna.wachtmeister@ki.se or phone: 0707890607

Kursansvarig :
Kristina Gemzell Danielsson
Institutionen för kvinnors och barns hälsa
0851772128

Kristina.Gemzell@ki.se

Kontaktpersoner :
Anna Hildenbrand Wachtmeister
Institutionen för kvinnors och barns hälsa
070-789 06 07
Anna.Hildenbrand.Wachtmeister@ki.se

Title : Present your research!

Kursnummer : 2787
Antal högskolepoäng : 1.5
Datum : 2019-09-23 -- 2019-09-27
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Women's and children's health
Särskild behörighet : None
Kursens syfte : The purpose of the course is to enable doctoral students to obtain knowledge and practical experience in presenting own research orally; adapted to different presentation formats, target groups, supporting media and situations, as well as to reflect on the development of own presentation skills.
Kursens lärandemål : After attending the course, the doctoral student should: 1. Be able to design an oral presentation in an asequate way. 2. Be able to design and use supportive media for a successful presentation. 3. Know the basics of presentation techniques and rethoric. 4. Have gained knowledge on how to interact with the audience.
Kursens innehåll : The scope of the course is to design and give oral presentations of your research results in different contexts. The main content of the course: 1. DESIGN AND DISPOSITION OF AN ORAL PRESENTATION (e.g. poster presentation, short presentation of research results): a. Goals and aims b. Structure c. Simplifications to enhance understanding d. Choice of pictures e. Language f. Time management 2. PRESENTATION TECHNIQUES AND RHETORIC FOR ORAL PRESENTATIONS: a. Body language and posture b. Language and pace c. How to prepare yourself for a presentation d. How to remember what you want to present e. Building confidence (be less nervous) to present f. What to avoid doing during a presentation g. How to deal with questions from the audience 3. DESIGN AND USE OF SUPPORTING MEDIA FOR A PRESENTATION: a. Power Point slides including introduction to power point b. Scientific poster c. Flipchart and other supporting media 4. INTERACTION WITH THE AUDIENCE: a. Catching the audience's attention b. How to address the audience c. Keeping the audience's attention for a longer period of time d. Communicating with the audience e. How to make the audience trust you f. Preparing the presentation with different audiences in mind g. Different learning styles which influences the audience's attention h. How to impress your audience i. Attention curve of the audience j. How to ease the learning of the audience 5. PRACTICAL EXERCISES: a. Presenting in front of an audience: i. Poster presentation ii. Presentation of student's choice iii. Elevator Pitch iv. Power point presentation v. Video recording of presentation with feedback b. Presentation exercises in pairs or small groups c. Presenting to different audiences d. Body language e. Language and pace f. How to use your audience as an asset g. How to interact with your audience h. How to remember your presentation i. Give and receive feedback on presentations j. Deal with nervousness and stay focused on your presentation
Arbetsformer : Lectures, written assignments, workshops, coaching, filming, group work, and practical exercises in groups and with a learning peer.
Examination : Formative assessment during active participation in all parts of the course Summative assessment of a. Poster presentation including scientific poster, b. Power Point presentation c. Elevator pitch
Obligatoriska moment : Three complete presentations (designed and presented to the class): a. Poster presentation including a scientific poster b. Power Point presentation c. Elevator Pitch d. Giving feed back on the other students' presentations e. Reflecting on own learning and development during the course
Antal studenter : 18 - 22
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : Welcome to apply for the doctoral course Present your research!

 The course focuses on research presentations in different contexts. You will practice presenting your own research results (or something else of your choice from your research area) as well as other topics in order to approach presentation skills from different angles. The course is highly interactive with a lot of exercises and together we will take your presentations to the next level. We will also deal with nervousness and a variety of other challenges you might be facing when presenting. The teachers focus on the individual students and make a great effort to create an environment, where the students feel safe to practice and try new presentation approaches.

 Quotes from former students (from the course evaluations):

 "It is not clear from the course description how amazing the course really is! So the description is very modest, in reality the course is life changing - best I have ever taken and it makes a difference."

 "Great course! How to dealing with stress was the most important part of the course when presenting. Worth taking!"

 "Everything was excellent. I am so grateful.I will bring it with me in the future. It early changed my way of thinking. All the feedback and filming was great. Thank you so very much!"

 The teachers are Anna Hildenbrand Wachtmeister (Ph.D.) and Ken Michelman (actor and teacher in public speaking and presentation skills) or Ulf Sandström (coach and teacher in presenation skills). The course will be given in a venue in the Old Town in Stockholm. Please address ALL questions to: anna.wachtmeister@ki.se or phone: 0707890607

Kursansvarig :
Kristina Gemzell Danielsson
Institutionen för kvinnors och barns hälsa
0851772128

Kristina.Gemzell@ki.se

Kontaktpersoner :
Anna Hildenbrand Wachtmeister
Institutionen för kvinnors och barns hälsa
070-789 06 07
Anna.Hildenbrand.Wachtmeister@ki.se

Title : Novel methods and approaches in health risk assessment

Kursnummer : 2795
Antal högskolepoäng : 1.5
Datum : 2019-11-18 -- 2019-11-22
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : The institute of Environmental Medicine
Särskild behörighet : Course Health risk assessment: principles and applications, or corresponding knowledge.
Kursens syfte : The purpose of the course is to give the student knowledge and understanding of how to perform a health risk assessment using systematic review methodology and other novel approaches.
Kursens lärandemål : After the course the student should be able to: define and analyse the scope and purpose of a health risk assessment to identify the specific questions to address apply and critically discuss methods to identify, assess and integrate scientific evidence in a health risk assessment critically discuss the need for and importance of transparency in health risk assessment
Kursens innehåll : The course includes novel methods and approaches for reaching evidence-based conclusions in health risk assessment. The scope and purpose of a health risk assessment is analysed with the aim to define specific questions related to risk assessment. Different types of scientific evidence that are used in a health risk assessment are identified. Methods for performing a systematic review are practiced, including searching for scientific studies, selection of studies, extraction of data from studies and assessment of reliability and relevance of studies. Methods for assessment of in vitro, in vivo and epidemiological studies are introduced and discussed. Integration of scientific evidence in weight of evidence approach is addressed. The importance of addressing uncertainty in health risk assessment is highlighted. The need for and importance of transparency in health risk assessment is discussed.
Arbetsformer : The course includes lectures, discussions, practical exercises and group assignments.
Examination : Examination is in the form of a written assignment and/or oral presentation.
Obligatoriska moment : Participation in practical exercises and group assignments are compulsory. Absence can be compensated with an individual assignment.
Antal studenter : 8 - 15
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information :

Kursansvarig :
Johanna Zilliacus
Institutet för miljömedicin
08 52483544
Johanna.Zilliacus@ki.se

Kontaktpersoner :
Johanna Bergman
Institutet för miljömedicin

johanna.bergman@ki.se

Nobels väg 13

17177
Stockholm

Title : Introduction to Stata for epidemiologists

Kursnummer : 2796
Antal högskolepoäng : 1.0
Datum : 2019-09-11 -- 2019-09-12
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Public Health Sciences
Särskild behörighet :
Kursens syfte : This course aims at introducing students to the basics of the statistical software Stata. It focuses on the minimum set of commands students should know for data-management, data-reporting, graphics and basic use of do-files.
Kursens lärandemål : After successfully completing this course you as a student should independently be able to: - use Stata to open and describe a dataset - import and export datasets in different formats - produce tables of descriptive statistics - count and present table of counts - provide a graphical presentation of continuous variables - generate new variables and recode existing variables - test univariable associations for continuous and categorical data
Kursens innehåll : This course is designed to introduce students to the basics of Stata. It will focus on the minimum set of commands students should know to organize their own work. Specific topics include data-management, data-reporting, graphics and basic use of do-files. By the end of this course, the student should be capable of using Stata independently. As motivating and instructive examples both lectures and exercises will be based on real studies published in top scientific journals.
Arbetsformer : Lectures and computer exercises using Stata®.
Examination : Written examination. Students who do not obtain a passing grade in the first examination will be offered a second chance to resubmit the examination within two months of the final day of the course. Students who do not obtain a passing grade at the first two examinations will be given top priority for admission the next time the course is offered.
Obligatoriska moment : The individual examination (summative assessment) is compulsory.
Antal studenter : 8 - 25
Urval av studenter : Eligible doctoral students will be selected based on 1) the relevance of the syllabus for the applicant's doctoral project (according to written motivation), and 2) date for registration as doctoral student (priority given to earlier registration date). To be considered, submit a completed application form. Give all information requested, including a description of current research and motivation for attending, and an account of previous courses taken.
Övrig information : The present course covers an introduction to the Stata package and basic commands for data manipulation and presentation. The content on how Stata can be used to manage and analyse epidemiological data is not covered. The examination will be a take-home exam to be handed in one week after the course.

Kursansvarig :
Nicola Orsini
Institutionen för folkhälsovetenskap

Nicola.Orsini@ki.se

Kontaktpersoner :
Amanda Aronsson
Institutionen för folkhälsovetenskap

amanda.aronsson@ki.se

Title : Biostatistics II: Logistic regression for epidemiologists

Kursnummer : 2797
Antal högskolepoäng : 2.0
Datum : 2019-09-16 -- 2019-09-27
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Public Health Sciences
Särskild behörighet : Knowledge in epidemiology and biostatistics equivalent to "Epidemiology I: Introduction to epidemiology" and "Biostatistics I: Introduction for epidemiologists" or corresponding courses
Kursens syfte : This course focuses on the application of linear and logistic regression in the analysis of epidemiological studies.
Kursens lärandemål : After successfully completing this course you as a student are expected to be able to: - choose a suitable regression model for assessing a specific research hypothesis using data collected from an epidemiological study, fit the model using standard statistical software, evaluate the fit of the model, and interpret the results. - explain the concept of confounding in epidemiological studies and demonstrate how to control/adjust for confounding using statistical models. - apply and interpret appropriate statistical models for studying effect modification. - critically evaluate the methodological aspects (design and analysis) of a scientific article reporting an epidemiological study. Intended learning outcomes are classified according to Bloom¿s taxonomy: knowledge, comprehension, application, analysis, synthesis, and evaluation (Bloom, 1956, extended by Anderson and Krathwohl, 2001).
Kursens innehåll : This course focuses on the application of linear and logistic regression in the analysis of epidemiological studies. Topics covered include a brief introduction to continuous and binary outcome data, univariable and multivariable models, interpretation of parameters for continuous and categorical predictors, flexible modeling of quantitative predictors, confounding and interaction, model fitting and model diagnostics.
Arbetsformer : Lectures, computer lab with exercises focusing on analysis of real data sets using statistical software, exercises not requiring statistical software, group discussions, literature review.
Examination : To pass the course, the student has to show that the learning outcomes have been achieved. The course grade is based on the individual written examination (summative assessment). The focus of the examination will be on understanding concepts and their application to analysis of epidemiological studies rather than mathematical detail. Students who do not obtain a passing grade in the first examination will be offered a second examination within two months of the final day of the course. Students who do not obtain a passing grade at the first two examinations will be given top priority for admission the next time the course is offered. If the course is not offered during the following two academic terms then a third examination will be scheduled within 12 months of the final day of the course.
Obligatoriska moment : The individual written examination (summative assessment).
Antal studenter : 8 - 25
Urval av studenter : Eligible doctoral students will be prioritized according to 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date). Submit a completed application form. Give all information requested, including a short description of current research training and motivation for attending, and an account of previous courses taken.
Övrig information : The course is extended over time in order to promote reflection and reinforce learning. The course will be given the following dates: September 16, 18, 20, 23, 25 and 27. The individual examination will be performed as a takehome examination. Prerequisite knowledge in epidemiology and biostatistics equivalent to "Epidemiology I: Introduction to epidemiology" and "Biostatistics I: Introduction for epidemiologists" or corresponding courses. Prior knowledge in any software, e.g. Stata, R or SAS is strongly recommended.

Kursansvarig :
Nicola Orsini
Institutionen för folkhälsovetenskap

Nicola.Orsini@ki.se

Kontaktpersoner :
Amanda Aronsson
Institutionen för folkhälsovetenskap

amanda.aronsson@ki.se

Title : Människans Fysiologi - en översikt

Kursnummer : 2827
Antal högskolepoäng : 3.0
Datum : 2019-12-16 -- 2020-01-17
Språk : Svenska
Nivå : Forskarnivå
Kursansvarig institution : Department of Physiology and Pharmacology
Särskild behörighet :
Kursens syfte : KI är ett medicinsk universitet med forskning och utbildning inom medicin och hälsa. Alla doktorander ska inhämta grundläggande kunskaper om den mänskliga kroppen i hälsa och sjukdom i de fall grundläggande medicinsk högskoleutbildning saknas. Denna kurs riktar sig till doktorander utan medicinsk bakgrund. Syftet med kursen är att ge kursdeltagarna en basal och mycket översiktlig introduktion till människokroppens organsystem, dess funktion och samverkan. Innehållet i kursen kommer att vara användbart för fortsatta studier där kunskap om människans fysiologi är av värde.
Kursens lärandemål : Studenten ska efter genomgången kurs ha översiktlig kunskap och förståelse för hur människokroppens organsystem fungerar och samverkar under normala betingelser. Kursinnehållet ska kunna användas för fortsatt fördjupning inom en forskarutbildning där vissa humanbiologiska kunskaper är av värde. Färdigheter - Skriftligt kunna redogöra för organsystemens funktion. - Sammanställa och delge information skriftligt för utvalda fördjupningsområden. Förhållningssätt och värderingsförmåga - Uppvisa ett kritiskt och vetenskapligt förhållningssätt till data som presenteras under föreläsningar och i kurslitteratur.
Kursens innehåll : - Nervsystemets fysiologi - Muskel - Autonoma nervsystemet och endokrinologi - Högre hjärnfunktioner - Hjärta och cirkulation - Njure och syra-bas - Respiration - Digestion Samt samspelet mellan olika organsystem.
Arbetsformer : Kursen innehåller föreläsningar, gruppdiskussioner i form av frågestunder samt problembaserad undervisning. Dessutom ges en frivillig dugga som ger bonuspoäng på tentamen.
Examination : För att bli godkänd i kursen måste studenten visa att lärandemålen har uppnåtts. Detta bedöms genom en skriftlig tentamen.
Obligatoriska moment : Moment som är obligatoriskt under kursen är tentamen. I anslutning till kursen ges ett rest-tentamenstillfälle.
Antal studenter : 6 - 20
Urval av studenter : Urvalet baseras på 1) kursplanens relevans för den sökandes doktorandprojekt (enligt motivering), 2) datum för doktorandregistrering (där tidigare registreringsdatum har förtur)
Övrig information : Kursen ges tillsammans med optikerprogrammets kurs i allmän fysiologi. Kurslokaler och specifikt schema fastställs i senare i vår och i början av hösten.

Kursansvarig :
Daniel Andersson
Institutionen för fysiologi och farmakologi

Daniel.C.Andersson@ki.se

Biomedicum kvarter 5C

17177
Stockholm

Kontaktpersoner :
-

Title : Advanced course in SAS programming for health care data

Kursnummer : 2868
Antal högskolepoäng : 1.5
Datum : 2019-12-02 -- 2019-12-06
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Medicine, Solna
Särskild behörighet : Introductory course in SAS programming (course 1447), Epidemiology I: Introduction to Epidemiology (course 1577) and Biostatistics I: Introduction for epidemiologists (course 1579) or corresponding courses.
Kursens syfte : The purpose of this course is to give students with prior experience in SAS the foundation needed to work independently with large data bases in SAS, performing the data management needed for observational studies from for instance a register linkage.
Kursens lärandemål : After this course the student should be able to - independently use a wide range of SAS functions and procedures for data management - manage data using Proc SQL, and in a given situation decide whether to use SQL or SAS Base - develop basic SAS macros - use core statistical procedures, and export results to other software Intended learning outcomes are classified according to Bloom¿s taxonomy: knowledge, comprehension, application, analysis, synthesis, and evaluation (Bloom, 1956, extended by Anderson and Krathwohl, 2001).
Kursens innehåll : Students will develop their skills in processing data using built-in functions and procedures, including loops, learn how to merge data sets and perform operations with SAS Base and SQL coding, and the benefits and tricks of transposition, where one moves between ¿long¿ and ¿wide¿ data sets. Students will also learn how to write user written functions (macros) in SAS, and work through examples of how to analyse data with core statistical techniques, and export relevant results to edited tables. Although exercises during the course will use health care data, the same skills would be useful for studies in e.g., demography, sociology, and economics.
Arbetsformer : Different strategies for teaching and learning, such as interactive lectures, laboratory exercises and small group discussions, will be used. Daily, formative assessments are used to support the students' learning processes.
Examination : A computerized individual take-home examination with realistic assignments, corresponding to the learning outcomes of the course. Students will be allowed to use any literature during the exam, including access to the Internet. Students who do not pass the examination will be offered a second examination within two months.
Obligatoriska moment : The individual examination (summative assessment) is compulsory.
Antal studenter : 8 - 25
Urval av studenter : Eligible doctoral students, with required prerequisite knowledge, will be selected based on 1) the relevance of the syllabus for the applicant's doctoral project (according to written motivation), and 2) date for registration as doctoral student (priority given to earlier registration date). To be considered, submit a completed application form. Give all information requested, including a description of current research and motivation for attending, and an account of previous courses taken.
Övrig information : Students are required to have skills in SAS corresponding to the learning outcomes of the course Introductory course in SAS programming (or corresponding courses).

Kursansvarig :
Thomas Frisell
Institutionen för medicin, Solna

thomas.frisell@ki.se

Kontaktpersoner :
Thomas Frisell
Institutionen för medicin, Solna

thomas.frisell@ki.se

Title : Kvalitetssäkring av klinisk forskning

Kursnummer : 2873
Antal högskolepoäng : 1.5
Datum : 2019-09-09 -- 2019-09-13
Språk : Svenska
Nivå : Forskarnivå
Kursansvarig institution : Department of Medicine, Solna
Särskild behörighet :
Kursens syfte : Kursen ger deltagaren kunskap och förståelse för vad som krävs för att kvalitetssäkra klinisk forskning. Du kommer efter kursen veta hur man ska göra för att säkert och i enlighet med lokala och nationella regelverk, etiska riktlinjer och internationella överenskommelser genomför klinisk forskning. Kursen är användbar för dem som arbetar med translationell eller klinisk laboratorieforskning. Den är också värdefull för forskare som arbetar med kvalitetsregister i vården, annan registerforskning och epidemiologisk forskning. Särskilt stort värde har kursen för de forskare som arbetar med interventioner av olika slag som medicinsk teknik eller kliniska prövningar. Utöver den kompetens kursen ger dig kommer du att kunna avlägga test för erhållande av ett internationellt gångbart certifikat i ICH-GCP (International Conference on Harmonisation - Good Clinical Practice). Oavsett forskningsområde kommer du förstå vikten av att sätta patientens säkerhet främst, och hur man gör för att skapa säkra data som andra kan lita på.
Kursens lärandemål : Kunskap och förståelse - Ha kunskap om hur man dokumenterar data så att samtliga moment i en klinisk forskningsprocess kan återskapas på ett tillförlitligt sätt - Förstå innebörden av Helsingforsdeklarationen och Good Clinical Practice så att forskningspersoners autonomi och integritet alltid sätts i första rummet - Ha kännedom om nationell, europeisk och internationell lagstiftning, vilka projekt som kräver ansökan till olika myndigheter och hur detta går till Färdighet och förmåga - Ha förmåga att avgöra vilka olika ansvar som prövare, medarbetare och sponsor har i en klinisk prövning - Ha förmåga att sammanfatta ett projektförslag i en synopsis och utifrån detta göra en riskanalys över ett projekt - Visa färdighet i att använda enklare statistiska metoder för att avgöra ett projekts vetenskapliga validitet Värderingsförmåga och förhållningssätt - Kunna värdera forskningsprojektförslag utifrån patientens perspektiv med ett etiskt och vetenskapligt förhållningssätt - Visa förmåga att värdera information från olika källor framförallt databaser på internet
Kursens innehåll : Kursen ger kunskaper om forskningsetik och hur ansökan till olika myndigheter görs, kunskap om kliniska prövningar, utveckling av nya behandlingar och då särskilt läkemedel, säkerhetsrapportering till myndigheter, personuppgiftslagen, etik-prövningslagen, biobankslagen och patientdatalagen, arkivering, internationella register över kliniska prövningar, riskanalys och viss statistik
Arbetsformer : Kursen är en distansutbildning. Den omfattar två huvudspår som delvis går parallellt. Det ena utgör arbete i grupp kring olika arbetsuppgifter som redovisas. Det andra utgörs av inläsning av GCP-regler. Pedagogiken baseras flipped classroom som innebär att läsanvisningar ges tidigt och att studenten därefter individuellt och i grupp arbetar med olika problem, fall och case. Förslag på lösningar presenteras och diskuteras under lärarhandledning. Frågestunder erbjuds under kursen. Inläsningen stöds av frågor som studenten kan använda för att kontrollera sin egen inlärning. Enstaka föreläsningar som webinars kan komma att ges, beroende på den enskilda kursens behov.
Examination : Utöver ett godkänt grupparbete kommer det att ges en individuell examination med flervalsfrågor.
Obligatoriska moment : Varje student måste delta i godkänt grupparbete. Varje student måste visa aktivitet på kursens hemsida i form av minst fem frågor, presentationer och/eller kommentarer på andras inlägg. Frånvaro eller brist på online aktivitet kan efter examinators bedömning kompenseras med en individuellt skriven uppsats.
Antal studenter : 20 - 25
Urval av studenter : Urvalet baseras på 1) kursplanens relevans för den sökandes doktorandprojekt (enligt motivering), 2) datum för doktorandregistrering (där tidigare registreringsdatum har förtur)
Övrig information : Kursen inleds med ett grupparbete som hålls på Karolinska i Solna. Resten av kursen utgörs av webbaserade självstudier. Ett webinar ges på onsdag eftermiddag. Tänk på att det kan vara svårt att hinna med klinisk tjänstgöring parallellt med kursen. Räkna med att lägga ca 20 timmar på den digitala delen, och kanske 8 timmar på grupparbetet.

Kursansvarig :
Pierre Lafolie
Institutionen för medicin, Solna
08-51779647
Pierre.Lafolie@ki.se

Klinisk farmakologi
L7:05 Solna
171 76
Stockholm

Kontaktpersoner :
Mari Liljefors
Institutionen för medicin, Solna

mari.liljefors@ki.se

Title : Quality assurance of clinical research

Kursnummer : 2873
Antal högskolepoäng : 1.5
Datum : 2019-09-23 -- 2019-09-27
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Medicine, Solna
Särskild behörighet :
Kursens syfte : This course provides the participant with the knowledge needed to secure the quality in clinical research. It gives an understanding of what is required to act safely and in accordance with local and national legislation, ethical guidelines and international treaty's when involved in clinical research. The course is useful for those working with translational or clinical laboratory research. It is valuable for researchers working with patient quality registries, other types of health registries and in epidemiology. It gives great value to researchers concerned with interventional studies including medicinal products, surgical treatments or pharmaceutical treatments. Beyond the competence you will get, you can also take a test for an internationally recognized certificate in ICH-GCP (International Conference of Harmonisation - Good Clinical Practice). Regardless of your research area, you will after this course understand how to protect patient's safety, and how to create trustful data.
Kursens lärandemål : Knowledge and understanding Knowledge on how to document data so all moments in a clinical research process can be recreated in a secured way Understand the meaning of the Helsinki Decaration and Good Clinical Practice so that research subjects autonomy and integrity always remain the first priority Knowledge on Swedish, European and international legislations, on which projects that need to be applied for and to which authority, and how such applications are done Skills and abilities Able to decide what different responsabilities the investigator, study team members and sponsor has in the clinical trial Able to summarise a project proposal into a synopsis and based on that make a risk-benefit analysis of the project Able to use simple statistical tools to judge a project proposal's scientific validity Judgement and approach Able to judge project proposals from the patient perspective including a scientific and sound ethical approach Able to evaluate information from different internet database sources
Kursens innehåll : The course provides insights into research ethics, and how applications to different authorities are done, it presents how clinical trials are undertaken, and how development of new treatments, in particular medicinal products, are done, and how safety reporting to authorities is done. The following laws, regulations and sources are discussed: Act on integrity of personal data, Act on ethical review of research projects, Act on biobanking, Act on patient data in health care, Act on archiving, and international registry's on clinical research. Risk analysis and some statistics are discussed.
Arbetsformer : The course is based on e-learning. There are two tracks, in part parallel. One track is based on group work around cases that are presented to the course. The other track is based on individual studies of GCP regulations. Both tracks include study material and tutor support. The pedagogy is based on flipped classroom meaning that instructions and learning resources will be made available early to support the individual learning and group works. Cases and their solutions will be presented and discussed under teachers supervision. Q&A will be provided. The GCP studies will be supported by MC self tests. Webinars may be provided, pending the need from the course.
Examination : In addition to an approved group work there will be an individual multiple choice examination.
Obligatoriska moment : Each student must participate in a group work. Each student must show activity on the course's home page with at least five questions, presentation and/or comments on others postings. Absence or lack of online activity can after the examiner's assessment be compensated by an individually written essay.
Antal studenter : 20 - 25
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : The course starts with a group work located at Karolinska, Solna. The remaining part is webbased. There is a webinar Wednesday afternoon, 15-16.30. Is is difficult to remain in full clinical work during the course. Usually a student spends 8 hours on the group work and app. 20 hours on the webbased part.

Kursansvarig :
Pierre Lafolie
Institutionen för medicin, Solna
08-51779647
Pierre.Lafolie@ki.se

Klinisk farmakologi
L7:05 Solna
171 76
Stockholm

Kontaktpersoner :
Mari Liljefors
Institutionen för medicin, Solna

mari.liljefors@ki.se

Title : Statistics with R - from data to publication figure

Kursnummer : 2953
Antal högskolepoäng : 3.0
Datum : 2019-10-21 -- 2019-11-08
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Laboratory Medicine
Särskild behörighet : none
Kursens syfte : Do you need to turn data into a publication figure? We offer tools and confidence for the student to independently select a statistical method for research questions in their field. The course is practical and includes implementing a basic statistical analysis in R, the leading statistical programming language in bioinformatics and medical science. Furthermore, we give a brief introduction to visualization in R, with a focus on R/ggplot2. Students can bring data from their own research project, or work on data from the course.
Kursens lärandemål : By the end of the course the student should be able to: *download and install the latest versions of R and Rstudio. *know where to look for help when working in R. *know how to import data into R. *use R for basic analysis and presentation of data in their field. *select statistical method and motivate the choice using a structured approach. *communicate efficiently with a statistician about their choice of statistical method.
Kursens innehåll : Basics of R. Download, install, import data, basic analysis, how to get help. Visualization of data. Learn to speak statistics. A structured approach to selecting statistical method and communicating with a statistician. Practice how to go from data to publication figure using data from your project or more or less friendly data offered by the course.
Arbetsformer : Distance learning with online lectures, quizzes and interaction with other students. Campus lectures and computer work using your own computer. Individual project work. Digital poster presentation of individual work.
Examination : Poster presentation and peer review.
Obligatoriska moment : Online quizzes and tasks. Participation during Poster Presentation day.
Antal studenter : 10 - 25
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : First two weeks are online-based, the third week has approximately 50% scheduled time at at Flemingsberg Campus.

Kursansvarig :
Johan Boström
Institutionen för laboratoriemedicin

johan.bostrom@ki.se

Kontaktpersoner :
Eric Rullman
Institutionen för laboratoriemedicin

Eric.Rullman@ki.se

Maria Westerstahl
Institutionen för laboratoriemedicin

Maria.Westerstahl@ki.se

Title : Neural Control of Inflammation: An introduction to Bioelectronic Medicine

Kursnummer : 2957
Antal högskolepoäng : 1.5
Datum : 2019-10-07 -- 2019-10-11
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Medicine, Solna
Särskild behörighet :
Kursens syfte : The purpose of this course is to give doctoral students insights into the neural control of homeostasis, particularly the regulation of inflammation, and how engineering, neuroscience, immunology and clinical medicine can come together to find new ways to treat disease.
Kursens lärandemål : After the course, the doctoral student will be able to define prototypical neural circuits that regulate homeostasis explain the role of inflammation in the pathogenesis of and recovery from autoimmune diseases, cardiovascular diseases and infection identify the components of the "inflammatory reflex" discuss regulatory mechanisms for cytokine release classify different interfaces with the nervous system and the immune system contrast advantages and drawbacks with major treatment approaches for inflammatory diseases describe molecular sensors for danger in the immune system and the nervous system define bioelectronic medicine and explain its potential role in clinical medicine summarize challenges in engineering and medicine for development of bioelectronic medicine technology
Kursens innehåll : Neural control of organ systems will be discussed in molecular, cellular and clinical perspectives. Special attention will be given to the mechanisms that detect and regulate inflammation. The neurophysiology of vagus nerve stimulation and other treatments that involve interfacing with the nervous system will be reviewed. Progress in neural interfacing and device development within the emerging field of Bioelectronic Medicine will be discussed.
Arbetsformer : Lectures, a student project group and a student presentation.
Examination : Project presentation and written examination.
Obligatoriska moment : Lectures, project group participation, active participation in presentation and passing the examination is compulsory for "PASS". Limited absence from lectures can be compensated for after individual discussion with the course organizers.
Antal studenter : 8 - 50
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : The course is given full time during working hours 8 am - 5 pm, Monday-Friday.

 The course is given jointly by the doctoral programmes Allergy, immunology and inflamation (Aii) and Cardiovascular Research. See: https://ki.se/en/staff/doctoralprogrammes.

Kursansvarig :
Peder Olofsson
Institutionen för medicin, Solna

Peder.Olofsson@ki.se

Kontaktpersoner :
-

Title : Medicinsk forskningsetik

Kursnummer : 2964
Antal högskolepoäng : 1.5
Datum : 2019-09-09 -- 2019-09-13
Språk : Svenska
Nivå : Forskarnivå
Kursansvarig institution : Department of Learning, Informatics, Management and Ethics
Särskild behörighet :
Kursens syfte : Syftet med kursen är att den forskarstuderande: - ska få förståelse för centrala forskningsetiska teorier, principer och riktlinjer och därmed få möjlighet att reflektera över etiska aspekter av den egna forskningen - ska få förståelse för vad som är god vetenskap samt var gränserna går för vad som är etiskt oacceptabel forskning både vad gäller forskning på människor och djur, samt vad som gäller för forskarens egen hederlighet - utvecklar ett forskningsetiskt förhållningssätt inom sin egen forskning, gentemot andras forskning och det omgivande samhället
Kursens lärandemål : Den forskarstuderande ska efter avslutad kurs kunna: - redogöra för forskningsetiska teorier, principer och, i viss mån, riktlinjer - kunna redogöra för vanliga forskningsetiska problemsituationer - identifiera, analysera och diskutera forskningsetiska problem och konflikter - genomföra en forskningsetisk argumentation för eller emot ett förfarande
Kursens innehåll : - Centrala forskningsetiska principer, teorier och argument - Centrala vetenskapsteoretiska begrepp och positioner, och dess relevans för forskningsetik - Forskning på människor, innefattande det informerade samtycket och dess komponenter - Försöksdjursetik, innefattande argument för och emot att använda djur för forskningsändamål, samt de 3 R:en - Etikprövningar och forskningsetiska riktlinjer, såsom Helsingforsdeklarationen - God vetenskaplig sed och avvikelser från god sed i forskningen, exempelvis frågor kring fabricering, förvanskning och plagiering, samt hantering av vetenskapligt författarskap - Intressekonflikter i samband med forskning, såsom jäv och sponsring
Arbetsformer : Föreläsningar, grupparbeten och plenumdiskussioner.
Examination : Deltagaren genomför en skriftlig forskningsetisk reflektion företrädesvis angående det egna forskningsprojektet. Ett fåtal studenter ges möjlighet att muntligt redovisa en forskningsetisk reflektion, i relation till samtliga lärandemål, angående sin forskning för samtliga deltagare.
Obligatoriska moment : Gruppdiskussioner och plenumdiskussioner är obligatoriska. Vid frånvaro kan studenten i viss utsträckning kompensera detta genom att lämna in skrivna svar angående de fall som diskuterats.
Antal studenter : 30 - 35
Urval av studenter : Urvalet baseras på 1) datum för doktorandregistrering (där tidigare registreringsdatum har förtur), 2) kursplanens relevans för den sökandes doktorandprojekt (enligt motivering).
Övrig information : Denna kurs innehåller obligatoriska moment under varje kursdag och studenterna förväntas därför närvara samtliga kursdagar.

Kursansvarig :
Gert Helgesson
Institutionen för lärande, informatik, management och etik

Gert.Helgesson@ki.se

Kontaktpersoner :
Annelie Jonsson
Institutionen för lärande, informatik, management och etik

annelie.jonsson@ki.se

Title : Medical research ethics

Kursnummer : 2964
Antal högskolepoäng : 1.5
Datum : 2019-12-02 -- 2019-12-06
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Learning, Informatics, Management and Ethics
Särskild behörighet :
Kursens syfte : The objective of this course is for the doctoral student to: - understand central research ethical theories, principles and guidelines, to gain the possibility to reflect over ethical aspects of his or her own research - understand what is good research and the boundaries for what is ethically unacceptable research with regards to humans and animals, and to the researcher's own honesty - develop a research ethical approach within his or her own research, to others' research and to society
Kursens lärandemål : After having completed the course, the doctoral student should be able to: - give an account of research ethical theories, principles, and, to some extent, guidelines - account for common problems that arise in the area of research ethics - identify, analyze, and discuss research ethical issues and conflicts - conduct a research ethical argumentation for or against a matter
Kursens innehåll : - Central research ethical principles, theories and arguments - Central philosophy of science - concepts and positions, and its relevance to research ethics - Research on humans, including informed consent and its components - Animal research ethics, including arguments for and against using animals for research purposes, and the three R¿s. - Ethical reviews and research ethical guidelines, such as the Helsinki Declaration - Good research practice and deviations from good research practice within research, for example issues concerning fabricated data, fraud and plagiarism, and handling of authorship in scientific writing - Conflicts of interest in research, such as bias and sponsorship
Arbetsformer : Lectures, group work and general discussions.
Examination : The doctoral student writes an essay on a research ethical theme, in relation to all intended learning outcomes, preferably related to his or her own research. A small number of students get the opportunity to orally present an ethical reflection concerning their research in front of the whole group.
Obligatoriska moment : Attendance is mandatory for the group work and general discussions. If the student is absent, he or she can to some extent compensate by handing in written answers concerning the cases that have been discussed.
Antal studenter : 30 - 35
Urval av studenter : Selection will be based on 1) date for registration as a doctoral student (priority given to earlier registration date), 2) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation).
Övrig information : This course contains mandatory elements on each course day, and the students are therefore expected to be present during each course day.

Kursansvarig :
Gert Helgesson
Institutionen för lärande, informatik, management och etik

Gert.Helgesson@ki.se

Kontaktpersoner :
Annelie Jonsson
Institutionen för lärande, informatik, management och etik

annelie.jonsson@ki.se

Title : Medical research ethics

Kursnummer : 2964
Antal högskolepoäng : 1.5
Datum : 2019-10-07 -- 2019-10-11
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Learning, Informatics, Management and Ethics
Särskild behörighet :
Kursens syfte : The objective of this course is for the doctoral student to: - understand central research ethical theories, principles and guidelines, to gain the possibility to reflect over ethical aspects of his or her own research - understand what is good research and the boundaries for what is ethically unacceptable research with regards to humans and animals, and to the researcher's own honesty - develop a research ethical approach within his or her own research, to others' research and to society
Kursens lärandemål : After having completed the course, the doctoral student should be able to: - give an account of research ethical theories, principles, and, to some extent, guidelines - account for common problems that arise in the area of research ethics - identify, analyze, and discuss research ethical issues and conflicts - conduct a research ethical argumentation for or against a matter
Kursens innehåll : - Central research ethical principles, theories and arguments - Central philosophy of science - concepts and positions, and its relevance to research ethics - Research on humans, including informed consent and its components - Animal research ethics, including arguments for and against using animals for research purposes, and the three R¿s. - Ethical reviews and research ethical guidelines, such as the Helsinki Declaration - Good research practice and deviations from good research practice within research, for example issues concerning fabricated data, fraud and plagiarism, and handling of authorship in scientific writing - Conflicts of interest in research, such as bias and sponsorship
Arbetsformer : Lectures, group work and general discussions.
Examination : The doctoral student writes an essay on a research ethical theme, in relation to all intended learning outcomes, preferably related to his or her own research. A small number of students get the opportunity to orally present an ethical reflection concerning their research in front of the whole group.
Obligatoriska moment : Attendance is mandatory for the group work and general discussions. If the student is absent, he or she can to some extent compensate by handing in written answers concerning the cases that have been discussed.
Antal studenter : 30 - 35
Urval av studenter : Selection will be based on 1) date for registration as a doctoral student (priority given to earlier registration date), 2) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation).
Övrig information : This course contains mandatory elements on each course day, and the students are therefore expected to be present during each course day.

Kursansvarig :
Gert Helgesson
Institutionen för lärande, informatik, management och etik

Gert.Helgesson@ki.se

Kontaktpersoner :
Annelie Jonsson
Institutionen för lärande, informatik, management och etik

annelie.jonsson@ki.se

Title : Medical research ethics

Kursnummer : 2964
Antal högskolepoäng : 1.5
Datum : 2019-11-04 -- 2019-11-08
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Learning, Informatics, Management and Ethics
Särskild behörighet :
Kursens syfte : The objective of this course is for the doctoral student to: - understand central research ethical theories, principles and guidelines, to gain the possibility to reflect over ethical aspects of his or her own research - understand what is good research and the boundaries for what is ethically unacceptable research with regards to humans and animals, and to the researcher's own honesty - develop a research ethical approach within his or her own research, to others' research and to society
Kursens lärandemål : After having completed the course, the doctoral student should be able to: - give an account of research ethical theories, principles, and, to some extent, guidelines - account for common problems that arise in the area of research ethics - identify, analyze, and discuss research ethical issues and conflicts - conduct a research ethical argumentation for or against a matter
Kursens innehåll : - Central research ethical principles, theories and arguments - Central philosophy of science - concepts and positions, and its relevance to research ethics - Research on humans, including informed consent and its components - Animal research ethics, including arguments for and against using animals for research purposes, and the three R¿s. - Ethical reviews and research ethical guidelines, such as the Helsinki Declaration - Good research practice and deviations from good research practice within research, for example issues concerning fabricated data, fraud and plagiarism, and handling of authorship in scientific writing - Conflicts of interest in research, such as bias and sponsorship
Arbetsformer : Lectures, group work and general discussions.
Examination : The doctoral student writes an essay on a research ethical theme, in relation to all intended learning outcomes, preferably related to his or her own research. A small number of students get the opportunity to orally present an ethical reflection concerning their research in front of the whole group.
Obligatoriska moment : Attendance is mandatory for the group work and general discussions. If the student is absent, he or she can to some extent compensate by handing in written answers concerning the cases that have been discussed.
Antal studenter : 30 - 35
Urval av studenter : Selection will be based on 1) date for registration as a doctoral student (priority given to earlier registration date), 2) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation).
Övrig information : This course contains mandatory elements on each course day, and the students are therefore expected to be present during each course day.

Kursansvarig :
Gert Helgesson
Institutionen för lärande, informatik, management och etik

Gert.Helgesson@ki.se

Kontaktpersoner :
Annelie Jonsson
Institutionen för lärande, informatik, management och etik

annelie.jonsson@ki.se

Title : Introduction to R - data management, analysis and graphical presentation

Kursnummer : 2971
Antal högskolepoäng : 2.5
Datum : 2019-09-25 -- 2019-10-28
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Laboratory Medicine
Särskild behörighet : Basic statistical knowledge (e.g. taken "Basic course in medical statistics" or similar course)
Kursens syfte : To increase the doctoral student's skills in data analysis and data presentation.
Kursens lärandemål : After attending the course, the student will be able to use R for data management, statistical analysis and graphical data presentation. The student will be able to install new functions in R.
Kursens innehåll : R is a powerful software/programming language for data analysis and graphical presentation. R is free-of-charge, and in most cases a useful alternative to commercial statistical software. The programming language is completely text-based, making it challenging compared to software with a graphical user interface. However, it offers greater flexibility, better control over analyses and an automatic documentation of performed analyses. The course focuses on structure and basic functions of the R programming language . A selection of functions for data management, statistical analysis and graphics is presented. The methods included are commonly used methods in clinical medical science (e.g. t-test, ANOVA, chi2-test, regression and survival analysis, box, line scatter, and bar plots). The course focuses mainly on how the various methods are applied in R and not their theroretical background, underlying assumptions or the theoretical intepretation of the results.
Arbetsformer : Lectures and online video material, practical exercises (individual and group assignments), peer assessment of other students' solutions.
Examination : Written examination
Obligatoriska moment : The practical exercises and the peer assessments of these are compulsory. Students unable to complete the exercises in time due to e.g. illness can get an extention of the deadline.
Antal studenter : 15 - 20
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : The course is held at Karolinska University Hospital Huddinge. Course dates: 25/9, 27/9, 4/10, 11/10, 18/10, 25/10, 28/10. Between these course dates, there will be deadlines for mandatory home assignments. Laptop is required for programming exercises.

Kursansvarig :
Jonatan Lindh
Institutionen för laboratoriemedicin
08-58581201
Jonatan.Lindh@ki.se

Avd. för klin. farmakologi, C1:68
Karolinska universitetssjukhuset Huddinge
14186
Stockholm

Kontaktpersoner :
Marine Andersson
Institutionen för laboratoriemedicin
08-585 81064
Marine.Andersson@ki.se

Title : Basic pharmacoepidemiology in a global context

Kursnummer : 2972
Antal högskolepoäng : 3.0
Datum : 2019-11-18 -- 2019-11-29
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Public Health Sciences
Särskild behörighet :
Kursens syfte : The purpose of the course is that the participants should gain basic knowledge about different study designs used in pharmacoepidemiological studies. The participants should further gain basic knowledge about how to design, conduct, analyse and interpret pharmacoepidemiological studies as well as treatment effects and adverse reactions to pharmaceuticals. The participants should also gain knowledge about determinants of drug use in countries at various income levels. The course will qualify the participants to critically review and evaluate pharmacoepidemiological studies.
Kursens lärandemål : At the end of the course the student should be able to: - Demonstrate knowledge of basic concepts in pharmacoepidemiology and its relevance for public health and for health policy making - Discuss common study designs and methods used in pharmacoepidemiological studies, including clinical trials - Explain the applications of these methods for studies of effects and adverse effects of drugs and economic consequences - Describe different types of data sources on drug exposure and explain their strengths and weaknesses - Describe systems for the reporting of adverse effects and explain their use for pharmacoepidemiological studies - Explain design of and methods to evaluate interventions qualitatively and quantitatively - Independently evaluate pharmacoepidemiological studies from scientific literature
Kursens innehåll : The course will provide an introduction to what pharmacoepidemiology is, how pharmacoepidemiological studies are conducted, how to interpret pharmacoepidemiological findings, and the relevance of pharmacoepidemiology for public health and for health policy making. The participants will be introduced to basic concepts in pharmacoepidemiology and drug statistics methodolody (the ATC/DDD system). Choice of study design and common pitfalls in pharmacoepidemiological research will be discussed. Determinants of drug use such as health systems, policies, prescriber and patient factors in various contexts (low-, middle- and high-income countries) will be explored. Methods to improve use of drugs will be presented, including the role of guidelines and various kinds of information or educational interventions directed to health care professionals, patients or the public. Ways of evaluating such interventions will be presented and discussed. Clinical trials will be discussed. The role of pharmacoepidemiological studies in pharmacovigilance (drug safety) will also be discussed.
Arbetsformer : The course will use KI:s learning platform. Learning activities include lectures, seminars, individual work and group work.
Examination : Individual oral and written presentation of group work. Each student will be assessed individually.
Obligatoriska moment : It is compulsory to attend seminars and to participate in individual work and group work. Absence will have to be compensated by extra individual assignments provided by the course organizers.
Antal studenter : 10 - 20
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information :

Kursansvarig :
Cecilia Stålsby Lundborg
Institutionen för folkhälsovetenskap
0852483366
Cecilia.Stalsby.Lundborg@ki.se

Kontaktpersoner :
Anna Machowska
Institutionen för folkhälsovetenskap

anna.machowska@ki.se

Title : Fluorescence microscopy: High content image acquisition and analysis

Kursnummer : 2973
Antal högskolepoäng : 3.0
Datum : 2019-09-09 -- 2019-09-20
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Cell and Molecular Biology
Särskild behörighet :
Kursens syfte : Fluorescence microscopy is for most researchers an essential tool. Lately, this technique developed more and more from 'simply' acquiring good looking images towards complex, high content imaging techniques. High content imaging is defined by the large number of image data generated either from live cell imaging, or microscopy on fixed samples. Examples are z-stack imaging, cell migration, protein dynamics, multi-position imaging, tiling & stitching, whole mount imaging, and automated image acquisitions in screening assays. The purpose of this course is to make the participants familiar with all of these high content techniques; from acquisition to analysis and presentation.
Kursens lärandemål : After passing the complete course, the participants will be familiar with diverse high content fluorescence microscopy applications. They will be competent in designing and performing experiments involving high content fluorescence microscopy. The participants will be able to analyse their data using an image analysis software, and how to present the data in a scientific format.
Kursens innehåll : Basic principles of fluorescence microscopy. Confocal Laser Scanning Microscopy: z-stack, tiling & stitching. Live Cell Imaging: long term imaging, protein dynamics (FLIP/FRAP). Automated Image Acquisition Microscope: multi-well imaging, screening. Hands-on sessions with diverse high content imaging experiments. Image analysis: ImageJ/CellProfiler. Lectures and workshops. Poster presentation
Arbetsformer : The pedagogic learning activities in the course consist of lectures, research seminars, hands-on experience at the microsopes/imaging, group discussions, experimental design, data processing and poster presentation.
Examination : There will be 2 examinations. In the end of the first week, there will be an assessment of written versions of experimental designs involving high content imaging experiments and image analysis. In the second week, the participants will present a scientific poster showing the results of their high content microscopy experiments performed during that week. The poster presentations will be attended by course participants, lecturers, course assistants, and others that are interested.
Obligatoriska moment : All activities (lectures, research seminars, microscope sessions, group discussions, data processing and poster presentations) are compulsory. If students are unable to attend they have to discuss with course organizer how this can be compensated. Compensation of microscopy sessions is not possible.
Antal studenter : 12 - 18
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : The course takes place at Biomedicum, Solna Campus, room B0313.

Kursansvarig :
Florian Salomons
Institutionen för cell- och molekylärbiologi
0852487395
Florian.Salomons@ki.se

Kontaktpersoner :
Matti Nikkola
Institutionen för cell- och molekylärbiologi

Matti.Nikkola@ki.se

Title : Study design in clinical research

Kursnummer : 2980
Antal högskolepoäng : 3.0
Datum : 2019-11-04 -- 2019-11-22
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Molecular Medicine and Surgery
Särskild behörighet :
Kursens syfte : The purpose of the course is to give early stage doctoral students going to conduct clinical research an overview over the design and conduct of clinical research, including writing a study protocol and critically reflecting on its content.
Kursens lärandemål : At the end of the course the students should be able to: 1) Independently plan and produce a study protocol, including a thorough methodological evaluation and choice of appropriate study design; 2) Critically reflect on other students' individual project work in a scientifically constructive way; 3) Interpret and critically evaluate scientific studies relevant to the course content.
Kursens innehåll : 1) Basic terms in epidemiology and clinical study design; 2) Measures of disease occurrence; 3) Observational studies, including cohort and case-control studies; 4) Systematic and random errors; 5) Experimental studies, including randomised clinical trials; 6) Quality of life in clinical research; 7) Screening and diagnosis in relation to clinical research. Throughout the course the students will work on an individual project (examination 1) for peer-review (examination 2) and the students will critically review and discuss relevant scientific articles (examination 3).
Arbetsformer : Lectures, seminars, individual article review, group discussions, and homework tasks. The course focuses on active learning, i.e. putting knowledge into practice and critically reflecting upon the knowledge, rather than memorising facts. Therefore, much of the focus of the course is on the individual project where students are required to develop a full study protocol including several important aspects covered in the lectures, article reviews and group discussions. Students will also peer-review each other's projects in the examination seminar.
Examination : 1) Individual project work: To develop a written comprehensive yet concise study protocol including several important aspects of study design as discussed during the course; 2) Peer-review of other students' projects followed by oral presentation of own project and opposition of other students projects during the group examination; 3) Critically review scientific articles relevant to the course content and participate actively in the seminars. To pass the course the student has to show that all intended learning outcomes have been reached.
Obligatoriska moment : Compulsory attendance includes the scheduled lectures and seminars. Absence will need to be replaced by individual assignments following discussion with the course co-ordinator, e.g. article reviews, with written or oral follow-up.
Antal studenter : 20 - 25
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : The course will take place during a 3-week period, at Karolinska Institutet, Solna. The majority of lectures and seminars are scheduled during the first 3.5 days of the first course week. The oral exam will take place at the end of the third week (Thursday). The course entails 3 credits, requiring two weeks of full-time work, which in addition to the lectures and seminars includes individual work on the study protocol. The lecturers are active clinical researchers.

Kursansvarig :
Shaohua Xie
Institutionen för molekylär medicin och kirurgi

shaohua.xie@ki.se

Kontaktpersoner :
Kalle Mälberg
Institutionen för molekylär medicin och kirurgi

kalle.malberg@ki.se

Shaohua Xie
Institutionen för molekylär medicin och kirurgi

shaohua.xie@ki.se

Title : Rare Disease Genomics

Kursnummer : 2981
Antal högskolepoäng : 1.5
Datum : 2019-11-25 -- 2019-11-29
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Molecular Medicine and Surgery
Särskild behörighet :
Kursens syfte : The purpose of this course is to provide the participants with knowledge and practical experience about current research strategies and tools for analysis of DNA-sequencing data in the field of rare disease genomics. The participants will also be made aware of ethical issues in relation to rare disease genomics.
Kursens lärandemål : After the course, the participants should be able: 1. To select adequate genomic technologies and data analysis strategies to answer research questions in the field of rare disease genetics or in their field of research; 2. To evaluate candidate variants and genes using publicly available databases and tools; 3. To understand functional validation of candidate variants and genes; 4. To reflect on ethical issues arising from large-scale sequencing studies.
Kursens innehåll : This is a course aimed at students actively involved or planning genetic analysis of rare diseases. The course is also appropriate for those working with complex diseases and cancer whose projects involve high throughput DNA sequencing. The focus of the course is the use of current DNA-sequencing methods and bioinformatics tools to understand the genetic basis of rare genetic diseases. Within the overall theme of clinical and experimental approaches to diagnostics of rare genetic diseases, particular attention will be paid to annotation and classification of different types of genetic variants (single nucleotide variants and structural variants). The course will cover the use of different in-silico pathogenicity scores, phenotype ontology terms, and population and family data for variant and gene interpretation. The course will cover selected experimental strategies to validate genetic findings. The course will also cover current clinical best practice guidelines concerning ethical issues such as report of incidental findings and acquisition of informed consent.
Arbetsformer : The course consists of lectures, research seminars, group discussions, hands-on computer-based exercises, self-studies, and a journal club seminar. Students are required to bring their laptops.
Examination : It will be assessed whether each individual doctoral student has reached all the learning outcomes of the course through a take-home examination. Antiplagiarism tools will be used according to KI guidelines.
Obligatoriska moment : All teaching and learning activities are compulsory. Absence from compulsory parts is compensated according to the instructions from the course leader.
Antal studenter : 12 - 16
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : The course will be held in Bioclinicum, Solna. Students are required to bring their laptops, to have the Integrative Genomics Viewer (IGV) installed and to have access to Eduroam wi-fi. More information will be provided before the beginning of the course.

Kursansvarig :
Anna Lindstrand
Institutionen för molekylär medicin och kirurgi

Anna.Lindstrand@ki.se

Kontaktpersoner :
Bianca Tesi
Institutionen för molekylär medicin och kirurgi

bianca.tesi@ki.se

Title : Preclinical Imaging Techniques

Kursnummer : 2987
Antal högskolepoäng : 1.5
Datum : 2019-11-11 -- 2019-11-15
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Laboratory Medicine
Särskild behörighet : Students must have passed the courses in laboratory animal science: Function A - Rodents and lagomorphs before attending this course.
Kursens syfte : The purpose of the course is to provide an overview on state-of-the-art small animal imaging techniques including fluorescence imaging, bioluminescence imaging, ultrasound, photoacoustic imaging, computed tomography (CT), magnetic resonance imaging (MRI) and Positron Emission Tomography (PET). The course will cover (1) basic theory and instrumentation principles of various imaging modalities, (2) applications of small animal imaging in translational research, (3) multi-modality imaging and co-registration for accurate diagnostic and follow-up of treatment efficacy and (4) hands-on training in imaging acquisition, imaging analysis and imaging reconstruction.
Kursens lärandemål : The intended learning outcome will be that at the end of the course, the student is expected to: (1) understand the basic concepts and outcomes of the different imaging modalities; (2) gain the knowledge and practical experience to run small animal imaging with various techniques; (3) process and analyze imaging data; (4) to run multi-modality imaging, evaluate data and co-registration; (5) be able to choose the right imaging modality, animal models and design for the animal experiment in preclinical studies in their own research field.
Kursens innehåll : This course will fully cover the background, theory and principles underlying each imaging modality used in preclinical imaging, with extensive practical training in the lab. There will be a general introduction to all the different imaging modalities including theory, principle of concept and application in research. For each modality, students will be introduced to theory and instrumental principles, experimental design in different research areas, research project case study and critical review. In the hands-on sessions, students will have the opportunity to acquire images in different animal models and to use several kinds of software to process imaging analysis, imaging reconstruction and co-registration.
Arbetsformer : Lectures/seminars, group discussions, critical review literature studies, and hands-on training.
Examination : The intended learning outcomes will be assessed by individual assignment. The individual assignment is to describe a research project in the student's own research area utilizing the small animal imaging techniques introduced during the course. In the assignment, students are required to describe detailed experimental design, rationale behind the experimental design and methodology in data acquisition/analysis. Students must complete the assignment by the end of the course. Students who do not obtain a passing grade in the first examination will be offered a second examination within two weeks of the final day of the course. The examination includes a written report of 1-2 pages and oral presentation.
Obligatoriska moment : The individual assignment, as well as attendance during the theoretical and hands-on parts of the course, is compulsory.
Antal studenter : 10 - 20
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : The course will be held Monday through Friday, approximately 09:00-16:00. More exact information regarding the schedule and venue will be sent to the course participants well ahead of time.

Kursansvarig :
Moustapha Hassan
Institutionen för laboratoriemedicin
08-585 838 62
Moustapha.Hassan@ki.se

Kontaktpersoner :
Ying Zhao
Institutionen för laboratoriemedicin

ying.zhao.1@ki.se

Marieviksgatan 48 LGH 1303

117 60
Stockholm

Title : Multivariate prediction modelling with applications in precision medicine

Kursnummer : 2990
Antal högskolepoäng : 1.5
Datum : 2019-11-25 -- 2019-11-29
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Medical Epidemiology and Biostatistics
Särskild behörighet : Epidemiology I, Introduction to epidemiology; Epidemiology II, Design of epidemiological studies; Biostatistics I, Introduction for epidemiologists; Biostatistics II, Logistic regression for epidemiologists; and Biostatistics III: Survival analysis for epidemiologists, or equivalent courses
Kursens syfte : This course aims to provide an introduction to both supervised and unsupervised methodologies for prediction modelling with a focus on biomedical applications, molecular epidemiology and personalised medicine.
Kursens lärandemål : After successfully completing this course you as a student are expected to be able to: - Perform and assess basic quality control and outlier detection - Apply unsupervised and supervised statistical learning methods to detect patterns in data - Devise cross-validation strategies for parameter estimation, model selection and prediction performance evaluation - Make informed judgement of how to apply basic principles for variable selection - Critically evaluate prediction models in real-world applications
Kursens innehåll : Personalised medicine is a cornerstone of tomorrows health care, and is based on the idea of stratifying patients into groups based on e.g. disease risk, prognosis or probability of treatment response and administrate the most suitable therapy for each individual. The capability to generate vast amounts of quantitative molecular data from DNA- and RNA-sequencing and other molecular profiling methods is providing unprecedented opportunity for implementation of personalized precision medicine approaches in the health care system. Molecular profiling typically generates data with tens of thousands of variables of which only a subset is relevant for treatment decisions. The promise of personalised medicine relies on our ability to turn the vast molecular datasets into clinically actionable predictive models of individualised therapy response. Application of statistical learning methods and prediction modelling is a central component in developing these models, and in developing the biomarker panels that can be used for molecular subtyping, risk stratification and prediction of treatment response. This course provides an introduction to statistical learning methods and prediction models that are relevant for personalised medicine with a focus on real-world applications. This course aims to provide an introduction to methodologies for prediction modelling with a focus on biomedical applications, molecular epidemiology and personalised medicine. The course covers basic theory and introduction to modern statistical and machine learning methods for prediction modelling in high-dimensional data, together with applied data analysis through computer-based exercises. Lectures and exercises will cover the full process going from the initial data set and through data normalisation, quality control, outlier detection, application of unsupervised learning methods, application of supervised learning methods, variable selection, cross-validation and model evaluation. The main objective of the course is to provide basic theory and practical knowledge that will enable course participants to apply covered methodologies in their own research. Topics covered include: data import and basic visualisation, data pre-processing, quality control and outlier detection, unsupervised learning, supervised learning, cross-validation for parameter estimation and estimation of prediction performance, variable selection, recently developed methods (e.g. deep learning, conformal prediction).
Arbetsformer : The course is based on a combination of lectures, which covers methods and theory, together with computer-based exercises in R, where real-world data are analysed and interpreted. Previous experience from practical experience applying statistical models in a computer-based environment (e.g R, SAS, Stata, Matlab, Python) is strongly recommended.
Examination : The individual examination will be performed as a take-home examination. It consists of an individually written lab-report where results from an applied data analysis mini-project should be summarised and critically evaluated. Students who do not obtain a passing grade in the first examination will be offered a second examination within two months of the final day of the course.
Obligatoriska moment : The individually written examination.
Antal studenter : 8 - 25
Urval av studenter : Eligible doctoral students, with required prerequisite knowledge, are selected according to 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date). Submit a completed application form. Give all information requested, including a description of current research and motivation for attending, and an account of previous courses taken.
Övrig information : It is recommended to have taken an introductory course in R or to have equivalent experience prior to taking this course.

Kursansvarig :
Mattias Rantalainen
Institutionen för medicinsk epidemiologi och biostatistik

mattias.rantalainen@ki.se

Kontaktpersoner :

Gunilla Nilsson Roos
Institutionen för medicinsk epidemiologi och biostatistik
08-524 822 93
gunilla.nilsson.roos@ki.se

Title : Extensions to the design and analysis of case-control studies

Kursnummer : 2991
Antal högskolepoäng : 1.5
Datum : 2019-10-23 -- 2019-10-31
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Medical Epidemiology and Biostatistics
Särskild behörighet : Epidemiology I, Introduction to epidemiology; Epidemiology II, Design of epidemiological studies; Biostatistics I, Introduction for epidemiologists; Biostatistics II, Logistic regression for epidemiologists; and Biostatistics III: Survival analysis for epidemiologists, or equivalent courses
Kursens syfte : This course aims to enable practicing epidemiologists to make more efficient use of already-available case-control data and to design case-control studies that will extend the possibilities for future analysis.
Kursens lärandemål : After successfully completing this course you as a student are expected to be able to: - select a suitable epidemiological design for addressing a specified research question and justify the choice of design compared to other options. - compare the risk estimates obtained by different sampling strategies from the same underlying cohort and interpret these estimates for common designs. - compare and contrast the purpose of time-matching and confounder-matching in (nested) case-control studies, and generalise the resulting risk sets to a wide range of standard and non-standard designs. - compute weights that enable the reconstruction of an underlying cohort from a (nested) case-control sample and recognise that two-stage designs, re-use of case-control data, and extended/extreme case-control designs can all be analysed using appropriate weights to reflect the sampling - discuss the designs of published studies with particular attention to the choice of controls and devise more efficient alternatives.
Kursens innehåll : The overall aim of this course is to present statistical approaches that enable researchers to design more efficient case-control studies and to exploit more efficiently the data provided by nested case-control studies conducted in well-defined cohorts (such as national registers). In particular, the course will focus on different sampling designs in terms of their (biased) representation of the underlying cohort, and how to reconstruct the correct numbers at-risk to produce unbiased parameter estimates, including several important quantities (other than the odds ratio). The course will demonstrate the application of these methods to re-use controls from a prior study or after breaking the matching in a matched case-control study, conduct more flexible and informative analysis, and make efficient use of costly data.
Arbetsformer : Lectures interspersed with tutorials consisting of workshops and journal club sessions. In the workshops, participants will develop and refine a study design to address a clinical/epidemiological research question which will be presented and discussed. Journal clubs will consist of discussion and debate concerning key papers that will be assigned.
Examination : The course grade will be based on a take-home assignment involving a proposed epidemiological study. The participant will submit a short written report and an oral presentation where they will present and defend their proposal. A passing grade must be obtained for both the written and oral section in order to obtain a passing grade for the course. Students who obtain a passing grade on one of these sections will be allowed to revise that part of their work and be re-examined under the same conditions. The exam will have a strong emphasis on intuitive understanding and ability to explain/communicate rather than on technical or mathematical detail. The take-home examination will be explained on the first day of the course, assigned on the last day, and due within ten days of the end of the course. Students who do not obtain a passing grade in the first examination will be offered a second examination within 2 months of the final day of the course.
Obligatoriska moment : The individual examination
Antal studenter : 8 - 25
Urval av studenter : Eligible doctoral students, with required prerequisite knowledge, will be selected based on 1) the relevance of the syllabus for the applicant's doctoral project (according to written motivation), and 2) date for registration as doctoral student (priority given to earlier registration date). To be considered, submit a completed application form. Give all information requested, including a description of current research and motivation for attending, and an account of previous courses taken.
Övrig information : Course dates are October 23, 25, 28, 30 and 31. The course is extended over time, but still five full course days, in order to promote reflection and reinforce learning.

Kursansvarig :
Marie Reilly
Institutionen för medicinsk epidemiologi och biostatistik
08-524 839 82
Marie.Reilly@ki.se

Kontaktpersoner :
Gunilla Nilsson Roos
Institutionen för medicinsk epidemiologi och biostatistik
08-524 822 93
gunilla.nilsson.roos@ki.se

Title : Biostatistics III: Survival analysis for epidemiologists

Kursnummer : 2992
Antal högskolepoäng : 1.5
Datum : 2019-11-11 -- 2019-11-20
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Medical Epidemiology and Biostatistics
Särskild behörighet : Epidemiology I, Introduction to epidemiology; Biostatistics I, Introduction for epidemiologists; Biostatistics II, Logistic regression for epidemiologists or equivalent courses.
Kursens syfte : This course focuses on the application of survival analysis methods to epidemiological studies.
Kursens lärandemål : After successfully completing this course students should be able to: - propose a suitable statistical model for assessing a specific research hypothesis using data from a cohort study, fit the model using standard statistical software, evaluate the fit of the model, and interpret the results. - explain the similarities and differences between Cox regression and Poisson regression. - discuss the concept of timescales in statistical models for time-to-event data, be able to control for different timescales using standard statistical software, and argue for an appropriate timescale for a given research hypothesis. -discuss the concept of confounding in epidemiological studies and be able to control/adjust for confounding using statistical models. - apply and interpret appropriate statistical models for studying effect modification and be able to reparameterise a statistical model to estimate appropriate contrasts. - critically evaluate the methodological aspects (design and analysis) of a scientific article reporting a cohort study.
Kursens innehåll : This course introduces statistical methods for survival analysis with emphasis on the application of such methods to the analysis of epidemiological cohort studies. Topics covered include methods for estimating survival (life table and Kaplan-Meier methods), comparing survival between subgroups (log-rank test), and modelling survival (primarily Poisson regression and the Cox proportional hazards model). The course addresses the concept of 'time' as a potential confounder or effect modifier and approaches to defining 'time' (e.g., time since entry, attained age, calendar time). The course will emphasise the basic concepts of statistical modelling in epidemiology, such as controlling for confounding and assessing effect modification.
Arbetsformer : Lectures, exercises focusing on analysis of real data using the free statistical software R, exercises not requiring statistical software, group discussions, literature review.
Examination : The course grade is based solely on a take-home examination. The focus of the exam will be on understanding concepts and their application to analysis of epidemiological studies rather than mathematical detail. The course examination will be held within two weeks of the final day of the course. Students who do not obtain a passing grade in the first examination will be offered a second examination within 2 months of the final day of the course. Students who do not obtain a passing grade at the first two examinations will be given top priority for admission the next time the course is offered. If the course is not offered during the following two academic terms then a third examination will be scheduled within 12 months of the final day of the course.
Obligatoriska moment : The individual examination
Antal studenter : 8 - 25
Urval av studenter : Eligible doctoral students, with required prerequisite knowledge, will be selected based on 1) the relevance of the syllabus for the applicant's doctoral project (according to written motivation), and 2) date for registration as doctoral student (priority given to earlier registration date). To be considered, submit a completed application form. Give all information requested, including a description of current research and motivation for attending, and an account of previous courses taken.
Övrig information : The course will be held November 11, 13, 15, 18 and 20. The course is extended over two weeks, but is still five full course days, to promote reflection and active learning. The statistical software R will be used throughout the course. It is strongly recommended to have taken an introductory course in R or to have equivalent experience prior to taking this course. We have provided a self assessment test (http://biostat3.net) for you to confirm that you understand the central concepts. We advise all potential applicants to take the test prior to applying for Biostatistics III. If you attempt the test under examination conditions (i.e., without referring to the answers) we would recommend: 1. if you score 70% or more then you possess the required prerequisite knowledge 2. if you score 40% to 70% you should revise the areas where you lost marks 3. if you score less than 40% you should, at a minimum, undertake an extensive review of central concepts in statistical modelling and possibly consider studying intermediate level courses (e.g., Biostatistics II) before taking Biostatistics III.

Kursansvarig :
Mark Clements
Institutionen för medicinsk epidemiologi och biostatistik

mark.clements@ki.se

Kontaktpersoner :
Gunilla Nilsson Roos
Institutionen för medicinsk epidemiologi och biostatistik
08-524 822 93
gunilla.nilsson.roos@ki.se

Title : Functional Neuroanatomy

Kursnummer : 2994
Antal högskolepoäng : 1.5
Datum : 2019-09-23 -- 2019-09-27
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Neuroscience
Särskild behörighet :
Kursens syfte : The purpose of this course is to provide the student with an in-depth understanding of human functional neuroanatomy. Besides human brain the course will focus on the most common animal model, the mouse, in order to point out similarities and differences.
Kursens lärandemål : 1) Gain a foundational understanding of human neuroanatomy and be able to contrast it to mice. 2) Be able to identify and understand the macro- and micro-anatomical structures of the adult brain. 3) To understand the anatomy and connections of the main functional systems in the brain 4) To be able to find these structures on Magnetic Resonance Images.
Kursens innehåll : A) Anatomical dissection of the human brain to understand its macroanatomy B) Microscopy to understand the histological features of adult human nervous system and how it differs between neocortical and archicortical (hippocampus) regions. C) Main morphological features of sensory, motor, limbic and cognitive functions. D) Microscopy of chosen neocortical, archicortical and cerebellar regions and recognition of the main cellular features between different layers in the respective areas. E) Understanding the principles of afferent and efferent connections.
Arbetsformer : Macroscopic dissections in the anatomic theatre, double-head microscopy, practical demonstration, lectures, work in the small groups, students presentation
Examination : a) identification of neuroanatomical structures on the pictures of human brain and b) writing an essay (max one A4 page) regarding the anatomy of one of the functional systems according to the instructions of the examiner.
Obligatoriska moment : All parts of the course are compulsory. In case of absence, a possible compensation will be discussed with the course leader.
Antal studenter : 10 - 32
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information :

Kursansvarig :
Tobias Karlsson
Institutionen för neurovetenskap

tobias.karlsson@ki.se

Kontaktpersoner :
-

Title : Anaesthesia, analgesia and surgery (mice and rats)

Kursnummer : 2996
Antal högskolepoäng : 1.5
Datum : 2019-12-02 -- 2019-12-06
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Comparative medicine
Särskild behörighet : Students need to complete the "Function A" laboratory animal science course (to carry out scientific procedures on animals), or must have completed an equivalent course.
Kursens syfte : The course is designed to meet the learning outcomes specified by the education and training recommendations supplied as an annex to EU Directive 2010/63/EU, which has been endorsed by Swedish legislation L150 (SJVFS 2017:40). Education and training in anaesthesia, analgesia and surgery is both essential, and a legal requirement, for all those who need to undertake such procedures on laboratory animals. Applying appropriate anaesthetic, analgesic and surgical techniques to in vivo studies enhances outcomes from research studies, reduces data variability, and is perceived as ethically acceptable.
Kursens lärandemål : After completion of this course, the students should be able to meet the defined learning outcomes as set out in the EU Education and Training Framework, specifically in modules 20, 21 and 22. Each module requires both theoretical knowledge, and acquisition and demonstration of practical skills. The list of suggested learning outcomes by such guidelines is comprehensive, but in summary, participants will acquire the knowledge and skills to anaesthetize animals safely and humanely, assess and alleviate post-surgical pain, and be able to conduct surgical procedures competently, using appropriate aseptic technique. Recognition of pain, suffering and distress, and appropriate use of euthanizing mice and rats will also be covered.
Kursens innehåll : The course provides guidance and information to individuals who, during their research work with animals, will need to apply sedation or anaesthesia and who will undertake surgical or other painful procedures. It includes details of methods of assessing, preventing and alleviating animal pain. The use of appropriate killing methods of rodents will also be included. The course will include training in the most recently developed behavioural measures of pain, including use of grimace scales. Monitoring of animals during anaesthesia, and coping with problems and emergencies are explained and demonstrated. Potential interactions between anaesthetic and analgesic agents and specific research protocols are also explained and discussed. Training is given in the principles of pre-operative animal assessment and care, preparations for surgery, aseptic technique and the principles of successful surgery. The course provides information about possible complications, post-operative care and monitoring along with details of the healing process. It also covers more practical elements for example the demonstration of commonly used instruments and provides an opportunity for trainees to practice some of the practical aspects of basic surgical technique, such as methods of suturing, using appropriate non-animal models.
Arbetsformer : The course will adopt a blended learning approach that combines e-learning, seminar lectures, discussions, interactive sessions and practical components. In addition to three e-learning modules on laboratory animal welfare, laboratory animal anaesthesia, and laboratory animal euthanasia, nine face-to-face seminar lectures will be given: - Introduction to anaesthesia - basic principles and definitions, anaesthesia and the 3Rs (replacement, reduction and refinement), selection of anaesthetics. - Preparation for anaesthesia, inhalational anaesthesia. - Injectable anaesthetics. - Monitoring anaesthesia and intra-operative care. - Long term anaesthesia and use of ventilators and neuromuscular blocking drugs. - Post-operative care - fluids, nutrition and nursing care. - Pain assessment and pain alleviation. - Surgery and aseptic techniques (1). - Surgery and aseptic techniques (2). The seminars incorporate video material and lecture notes will be provided. The course also includes problem solving sessions, which encourage students to reflect on the application of the course content in their own research area, and encourages them to discuss and explain their work with other participants. Interactive problem based sessions will be included to facilitate discussions. Interactive sessions will be used throughout the seminars to encourage participation and engagement by the students. Laboratory practical sessions (5-6 hours) on anaesthesia and surgical skills are interspersed with the seminars and interactive sessions.
Examination : Practical skills are assessed during the laboratory session using direct observation of practical skills, and a short answer/multiple choice question final written examination is held following conclusion of the course. A pass/fail criteria will be used as a global rate for this course.
Obligatoriska moment : All face-to-face sessions and active student participation are compulsory if the student is to be provided with certification of the successful completion of the course. Missed parts of the course as a consequence of a well-justified absence will need to be compensated after agreement with the course director e.g. with a written assignment or in future course editions.
Antal studenter : 8 - 16
Urval av studenter : Selection will be based on the relevance of the course syllabus for the applicant's doctoral project (need to use anaesthetic or surgical techniques in rodent models), which will be according to written motivation. If necessary, additional selection criterion will be used based on the date for registration as a doctoral student (priority given to earlier registration date).
Övrig information : This course will be held from Monday to Friday between approx. 9am and 5pm. Location: Learning Lab, von Eulers väg 4A, 2nd floor, Campus Solna. Key topics of this course include basic and advanced anaesthetic and analgesia, and basic surgical procedures on laboratory animals, with focus on anaesthesia, pain recognition and analgesia in rodent models. The main instructor of this course is internationally-recognized expert Professor Paul Flecknell, MA, VetMB, PhD, DECLAM, DLAS, DECVA, (Hon) DACLAM, (Hon) FRCVS, author of the Handbook Laboratory Animal Anaesthesia, 4th Edition, and a number of research publications and educational

material in the field. Course leader is Head of Eductaion at Comparative Medicine, Rafael Frias, DVM, MSc, PhD, Assoc. Prof (LAS), who will also be instructing in this course.

Kursansvarig :
Rafael Frias
Komparativ medicin
085246660
rafael.frias@ki.se

Kontaktpersoner :
-

Title : Advanced cancer biology

Kursnummer : 3024
Antal högskolepoäng : 3.0
Datum : 2019-08-27 -- 2019-12-17
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Microbiology, Tumor and Cell Biology
Särskild behörighet : Basic course in tumour biology and oncology.
Kursens syfte : The course aims to provide advanced, cutting edge pre-clinical and clinical knowledge in the field of cancer biology.
Kursens lärandemål : At the end of the course the students should: - Have acquired an updated overview of the cutting edge research activities within the fields of cell- and tumor biology. - Be able to show analytical and critical thinking when discussion advanced problems in cell- and tumor biology, beyond what is found in text books, and evaluate the relevance of the topics presented in the context of their own research activities and PhD studies. - Be able to discuss important aspects of tumor biology, including apoptosis, cell cycle, cancer stem cells, differentiation, virus and bacteria-associated cancer, tumor immunology and effects of chronic inflammation in carcinogenesis, cancer genetics and epigenetics, transcriptomics, proteomics and metabolomics of cancer, tumor microenvironment, angiogenesis, metastasis, tumor heterogeneity and development of new treatments as well as key issues in clinical cancer research.
Kursens innehåll : The lecturers will give a comprehensive and pedagogical overview of the research area as well as an in-depth discussion of their own research, related, but not limited, to the following topics: apoptosis, cell cycle, cancer stem cells, differentiation, virus and bacteria-associated cancer, tumor immunology and effects of chronic inflammation in carcinogenesis, cancer genetics and epigenetics, transcriptomics, proteomics and metabolomics of cancer, tumor microenvironment, angiogenesis, metastasis, tumor heterogeneity and development of new treatments as well as key issues in clinical cancer research.
Arbetsformer : The course will consist of about 20 lectures, with approximately 45 minutes per lecture, at least once a week during one semester. Each lecture will be followed by an open discussion between the students and the invited speaker led by one of the course organizers: this format will provide time for highlighting key issues within the specific topic and will enhance the possibility for the students to expand their networking activities due to direct contact with experts in the field. To increase the learning process and to stimulate the reflection on the course topic, the students will be required to study the most recent literature, still not present in the text books within the presented fields, prior to each seminar. Throughout the course period, the course organisers will have regular meetings with the students to follow up the learning process of each individual participant as well as to receive feedback from the students.
Examination : The students have to show that the intended learning outcomes of the course are reached. This will be individually assessed during the participation in the informal discussions after the seminars and on the basis an individual written assessment, in form of a project description where one or more topics presented during the course should be integrated within the student own research project (Max one and half A4 page, stating: the objective of the project, a brief description of the research plan, and the significance). The project description should be handed in maximum three weeks after the completion of the course to the organizers.
Obligatoriska moment : Attending the lectures and the written essay are compulsory. Missed seminars can be compensated by other activities after discussion with the course leader.
Antal studenter : 8 - 25
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : The course is organized to contain approximately 20 lectures of 45 min plus 15 min discussion, held once per week during the semester by invited national and international prominent researchers. All lectures are held at the Biomedicum, Solnavägen 9, in seminar rooms at the 3rd (entrance) floor, KI Solna Campus Tuesdays at 1 pm, unless else stated.
 In addition to the lectures, there will be an exam, which will consist of writing a small project, where one or more topics presented during the seminars should be integrated within your research project. The exam is to be handed in three weeks after the end of the course.

Kursansvarig :
Lars-Gunnar Larsson
Institutionen för mikrobiologi, tumör- och cellbiologi

lars-gunnar.larsson@ki.se

Kontaktpersoner :
Lars-Gunnar Larsson
Institutionen för mikrobiologi, tumör- och cellbiologi

lars-gunnar.larsson@ki.se

Title : Cell cycle, cancer and anti-cancer targets

Kursnummer : 3026
Antal högskolepoäng : 1.5
Datum : 2019-09-30 -- 2019-10-04
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Cell and Molecular Biology
Särskild behörighet :
Kursens syfte : The course aims to provide the students with an updated overview of the cutting edge research activities within the fields of cell cycle and oncology focusing on the role of cell cycle (de)regulation as a cause and possible treatment opportunity for cancer.
Kursens lärandemål : The course is organized to encourage analytical and critical thinking. At the end of this course, students should: - be able to understand, analyze and criticize current strategies towards exploiting the available information on cell cycle regulation, tumor suppressors and oncogenes for the development of novel therapeutics, - evaluate the relevance of the topics presented for their future research activities and PhD studies
Kursens innehåll : The course contains approximately 10 seminars/lectures, held by invited national and international prominent scientists, as well as 15 hours of discussion/problem-based learning. The speakers will be asked to give a comprehensive and pedagogical overview of the research area as well as an in depth discussion on their own research. Each seminar will be followed by a discussion led by the course organizers where the students are encouraged to interact with the invited speaker. To enable a fruitful discussion the students will have to read relevant literature in the field in advance of each seminar. The topics presented will cover the main aspects of the following themes: 1. Cell Cycle - molecular overview and biological functions 2. Oncogenes and tumor suppressors within the cell cycle 3. The connection between cell cycle and the hallmarks of cancer 4. Targeting aberrant cell cycle signaling in cancer - current therapeutics 5. Technological advances in cancer cell cycle therapeutics Each day will be dedicated to a cell-cycle phase/process and these themes will be incorporated.
Arbetsformer : The course is full-time. It will consist of approximately of 3 hours lectures/day. Each lecture will be followed by a discussion led by one of the course organizers. To increase the learning process and to stimulate the reflection on the seminars, the students will be required to study the most recent literature, still not present in the text books within the presented fields in advance of each seminar. Further, students will be required to individually present and discuss specific aspects of the content.
Examination : As assessment, students will be evaluated based on their contributions i) to the discussion during the problem-based learning of each topic; ii) in connection to an individual presentation on a specific topic assigned at the beginning of the course.
Obligatoriska moment : Students are expected to attend and participate in all lectures, presentations and discussions. In the case of absence, the student will be asked to read a relevant review and/or original research article on the topic missed, summarize it and discuss it with the organizer of the course at a convenient time by appointment.
Antal studenter : 8 - 20
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date).
Övrig information :

Kursansvarig :
Arne Lindqvist
Institutionen för cell- och molekylärbiologi

Arne.Lindqvist@ki.se

Kontaktpersoner :
Per Hydbring
Institutionen för onkologi-patologi

per.hydbring@ki.se

Title : Grundkurs i SPSS

Kursnummer : 3028
Antal högskolepoäng : 1.5
Datum : 2019-10-14 -- 2019-10-18
Språk : Svenska
Nivå : Forskarnivå
Kursansvarig institution : Department of Clinical Sciences, Danderyd Hospital
Särskild behörighet :
Kursens syfte : Kursen kommer att ge dig solida grundkunskaper i statistikprogrammet SPSS, du lär dig bl a hur man lägger upp och strukturerar ett dataset, och hur man kan importera material från andra applikationer till statistikprogrammet SPSS och att tvätta data så att dessa blir i analyserbart skick. En av de viktigaste delarna i analysen är att beskriva det datamaterial som har samlats in samt att hur man dokumenterar sina steg med hjälp av syntax. Vi går grundligt igenom olika procedurer för att "lära känna" olika typer av variabler. Detta inkluderar även omkodning av variabler, skapa nya variabler från befintliga och selektera ut individer som uppfyller vissa givna villkor.
Kursens lärandemål : Efter kursen skall doktoranden: - Ha grundläggande kunskaper om statistikprogrammet SPSS för att skapa strukturerade datafiler, modifiera data, samt skapa grafer och tabeller med hjälp av programmets menysystem. - Självständigt kunna skapa en datafil utifrån ett protokoll/enkät och mata in data. - Självständigt kunna definiera, sortera, modifiera och selektera data för enklare situationer. - Ha kunskap om de vanligaste syntax kommandona för att hantera statistiska data i SPSS. - Självständigt kunna skapa och modifiera enklare syntax för att bearbeta data i SPSS. - Ha ett förhållningssätt till datahantering som visar på grundläggande förståelse för vikten av dokumentation m.h.a. syntax. - Räkna med datumvariabler och hantera textvariabler. - Självständigt kunna skapa grafer och avancerade tabeller och göra enklare redigeringar. - Kunna utföra enklare analyser och tester. - Ha en grundläggande insikt om olika typer av fel som kan uppstå vid datahantering.
Kursens innehåll : Olika procedurer för att lära känna olika typer av variabler. Detta inkluderar även omkodning av variabler, skapa nya variabler från befintliga och selektera ut individer som uppfyller vissa givna villkor, samt att med hjälp av syntax utföra grundläggande variabelkommandon. Den beskrivande analysen omfattar både produktion av olika tabeller såväl som val av diagram. Du lär dig vilka typer av tabeller och diagram som är lämpliga beroende på de variabler du studerar. För att erhålla så presentationsfärdiga rapporter som möjligt lär vi oss även att redigera resultatet av analysen. Ändamålet är att hjälpa dig att effektivisera ditt arbete, dokumentera dina analyser med hjälp av syntax och snabbt komma igång med SPSS
Arbetsformer : Denna kurs som sträcker sig över 5 dagar (2 dagar workshop + en övningsuppgift med avslutande seminarium).
Examination : Examination av kursen består av en hemuppgift som redovisas skriftligt. Doktoranden får självständigt arbeta med ett datamaterial under kursens gång som innehåller vanliga typer av problem med datahantering före en statistisk analys är möjlig. Varje doktorand lämnar enskilt in en lösning som dokumentation hur problemen har lösts som diskuteras via en peer-review. Egen tillgång till SPSS är nödvändig för att göra examinationen
Obligatoriska moment : Vid frånvaro från datorövningarna får doktoranden göra kompletterande övningsuppgift/-er. Vid frånvaro från redovisning och genomgång av uppgift får doktoranden göra kompletterande övningsuppgift/-er.
Antal studenter : 10 - 15
Urval av studenter : Urvalet baseras på 1) kursplanens relevans för den sökandes doktorandprojekt (enligt motivering), 2) datum för doktorandregistrering (där tidigare registreringsdatum har förtur)
Övrig information : Kursen hålls måndag-onsdag samt fredag vid Danderyds Sjukhus, hus 18 plan 5.

Kursansvarig :
Fredrik Johansson
Institutionen för kliniska vetenskaper, Danderyds sjukhus

fredrik.johansson.2@ki.se

Kontaktpersoner :
-

Title : Human Papilloma Virus - from molecular biology to global health - an eLearning course

Kursnummer : 3030
Antal högskolepoäng : 1.5
Datum : 2019-09-09 -- 2019-10-18
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Laboratory Medicine
Särskild behörighet : The pre-course knowledge prerequisites are BSc or equivalent in biomedicine.
Kursens syfte : The course aims to provide knowledge of the scientific background of the biology of Human Papilloma Virus (HPV) infection, the burden of HPV associated diseases, screening and vaccination. In this one-week course on the global health importance of Human Papilloma Virus (HPV) infection, you will learn about HPV molecular biology and mechanisms of virus-induced cancer, screening of cervical samples, using HPV testing as well as bioinformatic analysis and methods for quality assurance and follow-up of programs of HPV-based screening and vaccination. You will explore how this knowledge can be applied to reduce the risk of disease. Taking part in an online discussion thread will give you a chance to reflect on the impact of HPV vaccination and screening in society. You will also learn about HPV analysis methods.
Kursens lärandemål : On completion of the course the student should be able to: 1 Understand and describe HPV infection and the burden of HPV-associated diseases. 2 Understand and describe methods for detection of HPV and the bioinformatics methods for HPV classification. 3 Describe the best practice for organized cervical screening. 4 Assess internationally standardized quality indicators of cervical screening 5 Interpret and validate results from screening and vaccination and their implications on the cancer burden.
Kursens innehåll : Block 1, Day 1-3: Molecular Biology of HPV Block 2, Day 3-4: Cervical Screening and HPV vaccination Block 3, Day 5-6: Quality Assurance and Follow-up of HPV-targeted Cancer Control
Arbetsformer : The course is internet-based and is open for 5 weeks in total. Each day in the first week video lectures, assignments relating to the contents of the video lectures and supplementary material in the form of open access scientific articles will be released. In some cases, the assignments will be in the form of lecture quizzes and in some cases you will be asked to post in a discussion forum.
Examination : You will need to have completed the learning activities before being able to participate in the final examination. Examination will be scheduled on two occasions, one immediately after the first two weeks and the other after five weeks. Using a webcam, you will identify yourself by taking a photo of yourself together with your government-issued photo ID. Examination will be internet-based in the form of multiple choice questions and writing assignments.
Obligatoriska moment : Participation in lecture quizzes, discussion thread, and examination is mandatory. The discussion thread will be organized and supervised according to the established format of the open source eLearning software Moodle. The teachers supervising the discussion thread will ensure that the participants reach the pre-defined educational goals.
Antal studenter : 8 - 50
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : Note that this is an online course where teaching and learning activity will be focused during the first two weeks of the period, ending with a formal exam. A new exam opportunity will be arranged at the end of week 5 of the period.

Kursansvarig :
Karin Sundström
Institutionen för laboratoriemedicin

karin.sundstrom@ki.se

Kontaktpersoner :
Karin Sundström
Institutionen för laboratoriemedicin

karin.sundstrom@ki.se

Title : Exploring entrepreneurial opportunities in research

Kursnummer : 3037
Antal högskolepoäng : 4.5
Datum : 2019-09-09 -- 2019-11-01
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Learning, Informatics, Management and Ethics
Särskild behörighet :
Kursens syfte : This course lays the foundation for the awareness of the potential of innovation and entrepreneurship. It will enhance your career opportunities inside and outside academia. The course will facilitate the discovery and identification of intellectual assets in the daily work. You will increase the awareness of the potential of innovation and entrepreneurship, by identifying opportunities for entrepreneurship in connection to research. In order to develop a business idea, whether in an economic or social context, you need to apply a number of business concepts. Relevant business tools will be introduced in order to develop a business idea stemming from research. The final step when exploring opportunities of entrepreneurship is to communicate and test your business idea on the market. For that purpose you will learn how to package an already developed business idea for introduction into the start-up world.
Kursens lärandemål : After the course, a doctoral student shall be able to; - demonstrate an understanding of the opportunities of innovation and entrepreneurship for utilisation of research, - discover and identify intellectual assets in their own research project, - explore the potential of different intellectual assets, - communicate a value proposition describing the need, approach, benefit and competition for identified intellectual assets, - assess their new skills and reflect on possible future effects, from ones individual perspective. - use design tools to gain an understanding for the user experience to develop solutions to user needs, - transform ideas into prototypes of products, services or processes, - use business tools such as business modelling to develop a potential business idea stemming from research, - assess their new skills and reflect on the possible future effects, from an organisational perspective. - identify and test the potential of a developed business idea, whether in an economic or social context, - package a business idea into a complete business plan, - communicate ("pitch") the business plan to people within the start-up world, such as potential investors, - assess their new skills and reflect on the possible future effects, from a societal perspective.
Kursens innehåll : Exploring entrepreneurial opportunities in research is a course divided into three modules. The first module begins with an introduction to entrepreneurship, what it is and how it can be used in the doctoral education. The doctoral students are then given a number of practical tools to identify intellectual assets within daily work to use in a minor innovation projects based on their own research. The second module begins with an introduction to prototyping using the design thinking approach. The doctoral students are then given a number of business tools to develop a business opportunity, stemming from their research, into a business model. The last module begins with an introduction to product road map followed by a comprehensive business plan. The doctoral students are then given a number of practical business tools to write and test a complete business plan of the developed idea.
Arbetsformer : Each of the three modules includes three mandatory days on KI Campus and two days for own work. The course days are usually Monday, Wednesday and Friday. The modules are separated with 2 week intervals. This course lays the foundation for development of an already identified business idea. It begins with an introduction to prototyping using the design thinking approach. The doctoral students are then given a number of business tools to develop a business opportunity, stemming from their research, into a business model. With the individual assignments the doctoral students are given the opportunity to take a closer look at the actual benefits of the new knowledge and put it into a larger context, with value for their own research and society. Learning activities consist of seminars and workshops as well as group and individual work.
Examination : The doctoral student is examined individually, on a written report, the design of a poster, the development of a prototype, business model and completion of a business plan.
Obligatoriska moment : Attendance is mandatory for all participants. The course director assesses if and in that case how absence can be compensated.
Antal studenter : 10 - 25
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : Course days are Mondays, Wednesdays and Fridays, nine days in total.

Kursansvarig :
Samer Yammine
Institutionen för lärande, informatik, management och etik

samer.yammine@ki.se

Kontaktpersoner :
-

Title : Epidemiology I: Introduction to epidemiology

Kursnummer : 3041
Antal högskolepoäng : 1.5
Datum : 2019-10-07 -- 2019-10-16
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Medical Epidemiology and Biostatistics
Särskild behörighet :
Kursens syfte : The aim of the course is to give an introduction to epidemiological theory and practice.
Kursens lärandemål : After successfully completing this course students are expected to be able to: -give examples of the contribution of epidemiology to science and discuss the importance of epidemiology as a research discipline. -estimate and in a general way interpret measures of disease occurrence and measures of association, and describe how a specific measure is governed by the study design. -explain strengths and weaknesses of common epidemiological study designs. -identify and explain possible sources of bias in epidemiological studies. -describe theoretical models for causation and discuss the principles of causal mechanisms. -apply knowledge of epidemiological concepts when critically reviewing scientific literature.
Kursens innehåll : The course gives an introduction to epidemiological theory and practice. It comprises basic principles regarding design, interpretation, and analysis of epidemiological studies. It introduces the concept of causation, concepts related to measures of disease occurrence and measures of association, common designs for epidemiological studies (with main focus on cohort studies), and the role of bias.
Arbetsformer : The course focuses on active learning, i.e. putting knowledge into practice and critically reflecting upon the knowledge, rather than memorising facts. Different strategies for teaching and learning will be used, such as lectures, group discussions and various forms of group exercises on selected topics.
Examination : To pass the course, the student has to show that the learning outcomes have been achieved. Assessments methods used are group assignments (formative assessments) along with an individual examination (summative assessment). The examination is viewed as contributing to the development of knowledge, rather than as a test of knowledge. Students who do not obtain a passing grade in the first examination will be offered a second chance to resubmit the examination within two months of the final day of the course. Students who do not obtain a passing grade at the first two examinations will be given top priority for admission the next time the course is offered.
Obligatoriska moment : The individual examination (summative assessment) is compulsory.
Antal studenter : 8 - 25
Urval av studenter : Eligible doctoral students will be prioritized according to 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date). To be considered, submit a completed application form. Give all information requested, including a short description of current research training and motivation for attending, as well as an account of previous courses taken.
Övrig information : Course dates are October 7, 9, 11, 14 and 16. The course is extended over two weeks, but still five full course days, in order to promote reflection and reinforce learning. The individual examination, i.e. the summative assessment, will be performed as a take-home examination after the course.

Kursansvarig :
Fang Fang
Institutionen för medicinsk epidemiologi och biostatistik

Fang.Fang@ki.se

Kontaktpersoner :
Gunilla Nilsson Roos
Institutionen för medicinsk epidemiologi och biostatistik
08-524 822 93
gunilla.nilsson.roos@ki.se

Title : Regenerative Medicine: Principles to Practice

Kursnummer : 3060
Antal högskolepoäng : 3.0
Datum : 2019-09-25 -- 2019-12-11
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Oncology-Pathology
Särskild behörighet : None.
Kursens syfte : The overall purpose of the course is to expose students to the latest scientific findings in the field of regenerative medicine, and to provide students with skills to conceptually develop independent lines of research within collaborative international networks.
Kursens lärandemål : After completion of this course, the student will be able to describe the basics of stem cell biology and provide an appreciation for novel approaches and applications in regenerative medicine. The student will be able to demonstrate an interdisciplinary understanding of central concepts in stem cells and critically evaluate the potential, advantages and drawbacks of different methods that are currently researched in the fields of stem cell and regenerative therapy. The student will be able to extract and integrate information from state-of-the-art lectures, scientific articles and literature search within the field.
Kursens innehåll : The course covers principles of stem cell biology and provides an appreciation for applications in regenerative medicine. Lectures and journal club-based topics include fundamental features of stem cell platforms, as well as the use of these and other platforms in the design and development of regenerative therapies. The course will exemplify how regenerative therapies can be targeted to different organs (e.g. within the cardiovascular system and the nervous system) with particular emphasis on the state-of-the-art technologies, prospects for clinical translation and current challenges within the field. The student will be required to take an active part in this course by contributing in journal clubs and discussions related to stem cell-based regenerative medicine.
Arbetsformer : The pedagogic frame of this course is based on lectures combined with topic-related research articles. Approximately half of the lectures will take place at KI (Flemingsberg and Solna campus). The other lectures will take place at Mayo Clinic and will be projected to students at KI via video conferencing. The course includes journal clubs where the students are required to present articles (written and orally), integrate the knowledge acquired from lectures and reading of the articles, and actively discuss their acquired knowledge as a group. Some journal clubs will be carried out in groups using interactive e-platforms. The examination task consists of a written report that is handed in for evaluation toward or at the completion of the course.
Examination : The examination consists of a written report that is handed in for evaluation at the end of the course. All students are also required to peer-review another student's examination report. The individual performance of each student will be evaluated separately.
Obligatoriska moment : Active participation in lectures and journal club-based discussions is mandatory. Compensation according to the instructions of the course director.
Antal studenter : 8 - 12
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : Lectures are held Wednesdays 15:00-17:00. Speakers will give their lectures at either the Mayo clinic (USA) or the Karolinska Institutet (SWE), and will be projected to students at the other site via video conferencing.

Kursansvarig :
Martin Enge
Institutionen för onkologi-patologi

Martin.Enge@ki.se

Kontaktpersoner :
Martin Enge
Institutionen för onkologi-patologi

Martin.Enge@ki.se

Title : Metoder för systematisk litteraturöversikt

Kursnummer : 3066
Antal högskolepoäng : 7.5
Datum : 2019-09-23 -- 2019-12-13
Språk : Svenska
Nivå : Forskarnivå
Kursansvarig institution : Department of Women's and children's health
Särskild behörighet :
Kursens syfte : Syftet med kursen är att ge kursdeltagaren en introduktion till systematiska litteraturöversikter (systematic reviews) som metod och att stimulera till fördjupad kunskap och förståelse inom sitt eget forskningsområde.
Kursens lärandemål : Efter avslutad kurs förväntas deltagarna: *kunna reflektera över vilket bidrag den egna forskningsöversikten tillför kunskapsfältet och identifiera frågor som kvarstår *ha utvecklat färdigheter i användandet av forskningssyntes som en vetenskaplig process *kunna kritiskt utvärdera procedurer vid systematiska litteraturöversikter
Kursens innehåll : Utveckla färdigheter att: *använda systematiskt tillvägagångssätt och att sammanfatta kunskap utifrån en vetenskaplig process och *reflektera över hur den valda frågeställningen inom ramen för avhandlingsarbetet bidrar till kunskapsbasen inom aktuellt forskningsområde. Centralt i kursen är att utveckla färdigheter att använda systematiskt tillvägagångssätt och att sammanfatta kunskap utifrån en vetenskaplig process. Olika syften och metoder för forskningsöversikter exemplifieras. Processen i en systematisk litteratur översikt karaktäriseras av en tydligt formulerad fråga som besvaras genom systematiska och explicita metoder för att identifiera, välja ut, kritiskt bedöma och analysera relevanta studier utifrån frågeställningen.
Arbetsformer : Kursen tillhandahåller en introduktion i metoder för systematisk litteraturgenomgång. Kursdeltagaren utvecklar ett protokoll för och genomför en systematisk litteraturgenomgång som fokuserar på en valfri komponent/aspekt som kommer att appliceras i deltagarens eget avhandlingsarbete. Kritiskt bedöma och diskutera svagheter och styrkor i det egna och kursdeltagarnas protokoll och översikter (reviews). Kursen är en distanskurs på deltid som omfattar tre till fyra tillfällen om 1-2 dagar varav ett är slutseminarium. Under kursen varieras arbetsformerna med t.ex. föreläsningar, eget arbete, granskning av andras arbete och gruppdiskussioner, för att kursdeltagarna utifrån denna erfarenhet ska kunna reflektera över hur kunskapen inom det egna forskningsfältet byggs upp. I kursen får deltagarna prova på att arbeta systematiskt utifrån principer om forskningssyntes och även bearbeta och kritiskt granska olika procedurer för forskningsöversikter. Vid första tillfället diskuteras frågeställningen och hur den valda komponenten inom ramen för det egna avhandlingsarbetet kan användas i studentens egna forskning. Till andra tillfället görs en individuell skriftlig plan eller protokoll för hur man implementerar en systematisk forskningsöversikt utifrån frågeställningen om den valda komponenten (2-3 sidor, 1,5 radavstånd, 12 punkter Times, Roman). Uppgiften skickas i form av ett word dokument (döpt med ditt namn).
Examination : Kursen examineras individuellt genom muntlig och skriftlig examination i form av en systematisk forskningsöversikt. För godkänd kurs krävs att lärandemålen är uppfyllda, vilket innebär godkänt resultat på den skriftliga examinationen samt aktivt deltagande i obligatoriska delar. Examinationen består av: 1) En individuell uppsats i formen av en systematisk översikt och består av en litteratur genomgång utifrån den valda frågeställningen (8-12 sidor, 1,5 radavstånd, 12 punkter Times Roman Fokus i den sista uppgiften kommer att vara på: a) hur kursdeltagaren har undersökt och sammanfattat den valda frågeställningen i den individuellt genomförda forskningssyntesen b) hur studenten, i en metoddiskussion, har kritiskt granskat procedurer i den egna systematiska genomgången 2) Aktivt deltagande i det sista seminariet, där den individuella uppgiften (punkt 1) presenteras och diskuteras. Examination för kursen kommer att tillhandahållas under ett år efter kursens slut.
Obligatoriska moment : Deltagandet i slutseminariet är obligatoriskt. Frånvaro från det sista seminariet ska kompenseras med en skriftlig kritisk diskussion av en annan students skriftliga rapport till det sista seminariet.
Antal studenter : 10 - 25
Urval av studenter : Urvalet baseras på 1) sökandes motivering till att gå kursen, där doktorander i Forskarskolan i vårdvetenskap har företräde framför andra sökanden, 2) datum för doktorandregistrering (där tidigare registreringsdatum har förtur)
Övrig information : Kursen ges över 12 veckor. Första kursveckan innehåller tre heldagar med föreläsningar/workshops på Campus Solna och studenterna rekommenderas att planera in en hög studieaktivitet under de första 1-2 kursveckorna. Föreläsningar och workshops/seminarier ges på Campus Solna den 23-25 september, den 10 och 18 oktober, den 8 november, samt den 2-3 december. Obligatoriskt deltagandet den 2 eller 3 december.

Kursansvarig :
Claudia Lampic
Institutionen för kvinnors och barns hälsa

Claudia.Lampic@ki.se

Kontaktpersoner :
Claudia Lampic
Institutionen för kvinnors och barns hälsa

Claudia.Lampic@ki.se

Title : Philosophy of science and the concept of health

Kursnummer : 3073
Antal högskolepoäng : 1.5
Datum : 2019-11-11 -- 2019-11-24
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Learning, Informatics, Management and Ethics
Särskild behörighet :
Kursens syfte : The course aim is that the doctoral student develops a theory of science approach by enabling the doctoral student to understand, employ, reflect upon and critically assess concepts and ideas of theories of science as well as their implications for in particular medical scientific practice. A further aim is to enable the doctoral student to understand, reflect upon and critically assess views on and implications of definitions of health and disease.
Kursens lärandemål : Upon completion of the course, the doctoral student should be able to: - understand central concepts and problems of the theory of science, in particular those of relevance for the medical sciences - identify, analyse and critically assess scientific problems, approaches and arguments from a theory of science perspective, in particular in the field of medical sciences
Kursens innehåll : The course contains the following parts: 1. Theory of knowledge Concepts such as knowledge, truth, and science, as well as the relations between them, are discussed and problematised. Verification/falsification, logical positivism, falsificationism and demarcation are other concepts and theoretical strands to be treated. 2. Theory of science Central concepts, theories and themes within this area are paradigm, the clinical-medical paradigm, the placebo effect, scientific anomalies, and the nature of and view on knowledge within the medical sciences (e.g. randomised clinical trials). The difference and relation between science and values are also dealt with. 3. Science, pseudo-science and scientific argumentation Demarcation in practice, the difference between science and pseudo-science, and argumentation within the sciences (in particular within the medical sciences) are in focus. 4. The concept of health The concept of health is critically assessed, for example based on notions of objectivity/subjectivity. The consequences of using different types of definitions of health are analysed. Furthermore, the concept of disease is discussed, e.g. in relation to normality.
Arbetsformer : The course is given online. The teaching and learning activities used are web lectures, written examination, individual writing exercises, an individual written assignment, and reading of course literature and other distributed materials.
Examination : Course examination consists of three parts: - Written examination - Individual writing exercises - One written individual assignment
Obligatoriska moment : All parts of the course examination are mandatory.
Antal studenter : 10 - 18
Urval av studenter : Selection will be based on the written motivation explaining why the course would benefit the doctoral studies.
Övrig information : The course is web-based and given over two weeks time.

Kursansvarig :
Gert Helgesson
Institutionen för lärande, informatik, management och etik

Gert.Helgesson@ki.se

Kontaktpersoner :
Annelie Jonsson
Institutionen för lärande, informatik, management och etik

annelie.jonsson@ki.se

Title : Behavioral phenotyping and cognitive studies in rodents

Kursnummer : 3074
Antal högskolepoäng : 1.5
Datum : 2019-10-21 -- 2019-10-25
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Neurobiology, Care Sciences and Society
Särskild behörighet : Students need to have completed a laboratory animal science course equivalent to FELASA B or FELASA C level (Directive Function A, D - EU Directive 2010/63 art. 23-26).
Kursens syfte : The course is aimed at students who are starting or have already started to use rodents for their research. The purpose of the course is to allow doctoral students to obtain theoretical and practical experience in an integrative manner in the most important behavioral tests used in behavioral phenotyping and in cognitive characterization of wild-type and transgenic mice. In particular the doctoral student will get the opportunity to obtain a solid understanding of the novel automated behavioral system IntelliCage (IC). IC allows simultaneous measurement of cognitive parameters including memory and learning, anxiety, ability to wait for ones turn, responses to natural reward, reversal learning, etc of >10 animals per IC in home cage setting. The ability of IC to measure >10 animals in home cage setting makes it an important future tool superior to classical single animal based tests.
Kursens lärandemål : At the end of the course the participant should be able to - know how to choose and understand the main rodent behavioral models and how to use them depending on the research question. - critically evaluate protocols, interpret the results of previous studies and adapt behavioral protocols to their own research.
Kursens innehåll : The course will give to the course participants the knowledge necessary to characterize rodent behavior using different paradigms such as Morris Water Maze, Y-maze, Open field and Fear conditioning, for basic characterisation of genetically modified rodents, for evaluation of novel drugs and for studying the effect of the environment. During the course the students will learn how to use IntelliCage to study mouse behavior including memory and learning in wild-type and transgenic mice. There is also a practical component where students will get hands-on-experience in the most common IC protocols used.
Arbetsformer : The course is partly theoretical, partly practical, where lectures, laboratory demonstrations and practical sessions are integrated. During the practical sessions the student will design a behavioral study using the IntelliCage, with data collection and final analysis.
Examination : A short answer and multiple-choice questioner or oral examination will be used to evaluate if the students have reached the required knowledge to successfully pass the course.
Obligatoriska moment : All sessions and activities are necessary for the students to successfully pass the course. Missed parts of the course for justified absence will be compensated in agreement with the course director.
Antal studenter : 8 - 15
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : Dr Vootele Voikar, inventor of IntelliCage system has been invited to take part in the course.

Kursansvarig :
Per Nilsson
Institutionen för neurobiologi, vårdvetenskap och samhälle

Per.et.Nilsson@ki.se

Kontaktpersoner :
Silvia Maioli
Institutionen för neurobiologi, vårdvetenskap och samhälle

silvia.maioli@ki.se

Simone Tambaro
Institutionen för neurobiologi, vårdvetenskap och samhälle

simone.tambaro@ki.se

Title : Gene Regulation in the Early Human Embryo

Kursnummer : 3080
Antal högskolepoäng : 1.5
Datum : 2019-09-16 -- 2019-09-20
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Biosciences and Nutrition
Särskild behörighet : Knowledge in pre-implantation embryology corresponding to the course Embryology I.
Kursens syfte : The aim of the course is to instruct the participants in human reproductive biology with focus on gene regulation and pathways that control the early embryo formation. To provide understanding in complexity of the molecular mechanisms that involve the successfully development of the early cleavage embryo, so that the student can evaluate, troubleshoot and improve existing assisted reproductive technology (ART) systems.
Kursens lärandemål : At the conclusion of this course students should be able to: 1. Show a good understanding of the genetic and epigenetic aspects of the preimplantation period of mammalian development that is crucial for reproductive success. 2. Show a good understanding of the dynamic changes in gene expression during human early embryo development involving differentiation, survival, fragmentation, zygotic genome activation, cell determination, embryo patterning and apoptosis, gene profiling from oocyte development to blastocyst formation. 3. Explain the general epigenetic influence of the laboratory and clinical environment on embryo culture and physical-chemical properties of the specific culture systems. 4. Produce coherent, logical and concise explanations of data and concepts in the field of gene regulation in the early human embryo - both in writing and orally, through consideration of the course material. 5. Discuss scientific literature related to ART and reproduction physiology in a constructive and informed fashion.
Kursens innehåll : 1.Genetics in oocyte maturation and embryo development 2. Importance of epigenetics in embryo development 3. Cell-cell (blastomere) interactions and receptor signaling 4. Gamete interaction 5. Zygotic genome activation 6. Embryo morphology, euploidy, aneuploidy and mosaicism 7. Implantation and post-implantation genetics 8. Genetic aspects of prenatal diagnostics, preimplantation genetic diagnosis and preimplantation genetic screening. 9. General ethical aspects 10. Literature work and discussion in reproductive genetics
Arbetsformer : The course runs for one week with lectures, and literature work as part of the course examination.

Examination : The examination will consist of an individual or group oral presentation on a course topic, followed by a questions and answers session and an individual written exam.
Obligatoriska moment : Attendance during the lectures and active part in the literature work.
Antal studenter : 8 - 14
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : The course will be held at Karolinska Institutet, Department of Biosience and Nutrition, NEO-Huddinge.

Kursansvarig :
Jose Inzunza
Institutionen för biovetenskaper och näringslära
08-585 850 93
Jose.Inzunza@ki.se

Hälsovägen 7, Novum

141 86
Stockholm

Kontaktpersoner :
Virpi Töhönen
Institutionen för biovetenskaper och näringslära

Virpi.Tohonen@ki.se

Title : Medical developmental biology

Kursnummer : 3081
Antal högskolepoäng : 1.5
Datum : 2019-08-19 -- 2019-09-06
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department for Clinical Science, Intervention and Technology
Särskild behörighet :
Kursens syfte : The main purpose of the course is to acquire a better understanding of issues, including ethical ones, in developmental and stem cell biology with direct implications for human development and disease. Furthermore, the course will expose the students to international collaboration and provide an opportunity to build an international network.
Kursens lärandemål : After the course the doctoral student is expected to be able: - To fully understand and review the basic biology and definitions of embryonic and fetal stem cells, - To understand and review the most fundamental genetic and epigenetic/transcriptional regulatory mechanisms guiding the development of the essential organs, - To understand and review the basic principles of regenerative medicine and perinatal physiology.
Kursens innehåll : To achieve a better understanding of embryonic and fetal development, and to provide better healthcare for newborns and children, it is necessary to understand the development in basic research to be able to more rapidly apply such knowledge in clinical care. In this course, world-leading scientists in the fields of developmental biology, stem cell research, and regenerative medicine, will discuss the molecular mechanisms, cell biology, genetics and epigenetics of development in general and more specifically in a wide variety of organs, with a particular bias towards human development and disease. The nature of the course is translational and provide a wide range of knowledge from transcriptional mechanisms to basic physiology, ethics and patient care.
Arbetsformer : The course is based on lectures from morning to lunch by prominent lecturers. There are practical workshops and clinical visits in the afternoons. The course is considered demanding and requires full-time presence and attention.
Examination : Every student needs to make either a fifteen minute individual presentation or to present their projects by poster presentation. The oral and poster presentations are examined by at least four course leaders and the participants receive immediate feedback directly from the course leaders/examiners. Further feedback is given continuously throughout the course. Every student will in addition write a report that is handed in for evaluation at the end of the course. All students are also required to peer-review another student's examination report. The individual performance of each student will be evaluated separately.
Obligatoriska moment : Full presence is absolutely required. Necessary absence will be regulated with the course leader and given as extra tasks.
Antal studenter : 15 - 34
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : This is an international exchange course in Medical Developmental Biology, a.k.a. Developmental and perinatal biology, with University of Toronto (U of T) that has been running since 1996. This year the course will be held in Stockholm with numerous distinguished speakers (from U of T and KI) and advanced workshops. The course covers everything from basic research on stem cells and early embryonic development to clinical aspects of pregnancy, early childhood, epigenetic and ethics.

 The course is a full time course during the week of 19-23rd of August with extensive program including lectures, interactive practical workshops, special lectures, social networking, poster and oral research presentations by students. A written report should be written and undergone peer-review in the following two weeks with final end of the course on the 6th of September.

Kursansvarig :
Fredrik Lanner
Institutionen för klinisk vetenskap, intervention och teknik

fredrik.lanner@ki.se

Kontaktpersoner :
Ola Hermanson
Institutionen för neurovetenskap
468-5248-7477
Ola.Hermanson@ki.se

Fredrik Lanner
Institutionen för klinisk vetenskap, intervention och teknik

fredrik.lanner@ki.se

Title : Cryobiology in assisted reproductive technology

Kursnummer : 3089
Antal högskolepoäng : 1.5
Datum : 2019-11-25 -- 2019-11-29
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Biosciences and Nutrition
Särskild behörighet :
Kursens syfte : The aim of the course is to instruct the participants in human and mouse reproductive biology with focus on cryopreservation technology and embryo banking, as well as to give them practical experience through practical demonstrations in cryopreservation of gametes and embryos in IVF technology. To provide understanding of principles of cryobiology and components of culture systems used in assisted reproduction technology (ART). Thus the student can evaluate, troubleshoot and improve existing technology.
Kursens lärandemål : The objectives of this course are that at the conclusion of this course students should have a good understanding of: Folliculogenesis and Fertilization; Preimplantation Embryology; sperm and oocytes retrieval; criteria of selected or scoring the gametes and zygotes for cryopreservation; liquid nitrogen handling; principles of cryobiology. Students should be aware of the general aspects and implication of the cryobiology research and the potentiality that this represents for clinical application; The principles of cryobiology; The Cryoprotectants additives and how they protect the cells by stabilizing intracellular proteins; The factors that affect cellular response to freezing; The different cryopreservation protocols and what is ongoing in this field; The cross-contamination of samples in liquid nitrogen; problems in achieving a good result of cryopreservation procedure; The possible epigenetic effects of the cryopreservation procedure; testicular and ovarian tissue cryopreservation procedures; Storage of the cryopreserved samples, the advantages of the cryopreservation and embryo bank. Finally the students will improve their capacity to produce coherent, logical and concise explanations of data and concepts - both written and oral, through consideration of the course material. Students will also develop their ability to criticize scientific literature related with cryopreservations technology and reproduction physiology in a constructive and informed fashion; Be aware of potential development of cryobiology and IVF in the future.
Kursens innehåll : Contents . Sperm-and ovogenesis and Hormonal function . Main components of the culture system . Physical-chemical properties of culture system . Functional characteristics of different tissue culture incubators . The influence of the laboratory and clinic environment on embryo culture . The morphology of oocytes, zygotes and cleavage stage embryos as well as morulae and blastocysts . Developmental milestones . Biochemical tests for predicting developmental potential . Possible effects of culture and frozen condition on epigenetics events . Clinical aspects of frozen embryo transfer . The potential of the different cryopreservation techniques in clinic application with focus on IVF . General aspects and implication of the cryobiology in research
Arbetsformer : Divided in lectures and laboratory demonstrations: 1. Embryology theory (lectures) 2.Culture system (lectures) 3. cryobiology (lectures) 4. Gametes and embryos quality evaluation (lectures) Lab.1. Laboratory demonstration in gametes and embryo retrieval; In-vitro fertilization and cryoprotectants additive; Handling with liquid nitrogen (lab). Lab.2. Evaluation of the quality of the fertilize oocytes and selection for freezing; performed cryopreservation on the selected samples (lab). Lab.3. Thawing frozen samples and quality assessment (lab). 6. Genetics and epigenetics aspects (lectures) 7. Introduction to the different cryopreservation procedures (lectures) 8. New trends in gametes and embryo cryopreservation (lectures) 9. Fertility preservation and challenge (lecture) 10. Future in human cryobiology and ethical aspects (lecture). Course test, evaluation, discussions, examination and closing of course.
Examination : Examination on day 5, with individual or group presentations of the literature work related to the contents of the course, discussions and feedback. Every student will be individually assessed and the students has to show that all learning outcomes have been reached.
Obligatoriska moment : The laboratory demonstrations are obligatory; there will be lectures combined with laboratory demo, but if the student will be absent of one laboratory section, the student should present a literature work related to the subject of the missing activity.
Antal studenter : 8 - 12
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : The course will be held at Karolinska Institutet, Department of Biosciences and Nutrition, NEO Huddinge.

Kursansvarig :
Jose Inzunza
Institutionen för biovetenskaper och näringslära
08-585 850 93
Jose.Inzunza@ki.se

Hälsovägen 7, Novum

141 86
Stockholm

Kontaktpersoner :
-

Title : Omics data analysis: From quantitative data to biological information

Kursnummer : 3102
Antal högskolepoäng : 3.0
Datum : 2019-10-07 -- 2019-10-18
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Oncology-Pathology
Särskild behörighet :
Kursens syfte : During recent years omics data has become an integral part of many biomedical and clinical research projects. This broad introductory course aims at bridging the gap between classical biomedical research, omics technologies and bioinformatics. The course will give students an introduction to omics technologies and basic knowledge of omics data analysis workflows.
Kursens lärandemål : After completed course, the student will be able to: * Understand the principles and perform the basics of high-throughtput technologies and the omics data analysis workflow (genomics, transcriptomics, proteomics,) * Understand the principles aspects of study design, experimental planning and sample selection * Know how to do basic quality control of data by use of boxplots, PCA etc * Know what normalization, data transformation etc means and what it does to your data * Know the principles of some basic statistics such as t-test and false discovery rate * Know the principles of dimensionality reduction methods such as PCA and tSNE * Use tools for hierarchical clustering, functional enrichment and pathway analysis * Use tools for gene ontology (GO) annotation/enrichment
Kursens innehåll : * The omics data analysis workflow: from quantitative data to biological information (emphasis on analysis of genomics, transcriptomics, and proteomics data) * Introduction to omics technologies and data structures * Omics experimental design and sample selection * Introduction to data transformation and normalisation * Introduction to basic statistics in omics data analysis: significance test/p-values/multiple testing correction/false discovery rate * Introduction to dimensionality reduction PCA/MDS/tSNE * Introduction to Gene Ontology and enrichment analysis * Introduction to correlation analysis and hierarchical clustering * Introduction to network and pathway analysis * Introduction to online bioinformatics resources and analysis tools * Introduction to the R statistical programming language * Literature study with a critical view on how omics data is analyzed in clinical research. * Current state of the art in omics data analysis is highlighted through case studies, literature studies and demonstrations
Arbetsformer : The teaching activities for the course will be based on lectures, workshops and data analysis cases. The students will participate in a literature study with discussions in seminar groups as well as an independent data analysis exam project. The students will also be able to download and use some of the software in workshops during the course.
Examination : The course assessment is based on two type of assignments: a literature study with a critical view on an omics data analysis subject performed in groups and an individual written omics data analysis project illustrating the different topics covered during the course.
Obligatoriska moment : * Attendance on lectures and data analysis demonstrations. * Attendance to literature study discussion seminar. * Attendance to examination seminar and hand in the written examination assignments. * Extra written literature study can be used to compensate absence.
Antal studenter : 12 - 24
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : This course has previously been given with number 2523.
 The course is given jointly by the doctoral programmes Allergy, immunology and inflamation (Aii), Tumor Biology and Oncology (FoTO), Biology of infections and global health (BIGH) and Doctoral Programme in Development and Regeneration (DEVREG). See: https://ki.se/en/staff/doctoralprogrammes.

Kursansvarig :
Mattias Vesterlund
Institutionen för onkologi-patologi

Mattias.Vesterlund@ki.se

Kontaktpersoner :
Lukas Orre
Institutionen för onkologi-patologi

Lukas.Orre@ki.se

Matthias Stahl
Institutionen för onkologi-patologi

matthias.stahl@ki.se

Mattias Vesterlund
Institutionen för onkologi-patologi

Mattias.Vesterlund@ki.se

Title : Pathology

Kursnummer : 3109
Antal högskolepoäng : 3.0
Datum : 2019-10-14 -- 2019-10-25
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Laboratory Medicine
Särskild behörighet :
Kursens syfte : The aim of the course is to enable doctoral students lacking basic higher education knowledge in medicine to understand basic pathological events, such as tissue injury, repair and inflammation and their relation to the development of diseases, and how these alterations are coupled to the microstructure of pathological tissues.
Kursens lärandemål : After the course the student should 1) understand the mechanisms behind basic pathological events; 2) be able to identify selected pathological tissues at light microscopical level and describe the components/cells and their functions; 3) be able to search for and combine information regarding a selected group of diseases, followed by an oral presentation and discussion.
Kursens innehåll : The course is divided into two parts. One part illustrates cell injury, adaptation, tissue repair, inflammation, cancer development and classification. Methods in molecular pathology are discussed. During the other part of the course a selected group of diseases are studied both during digital microscopy practices and as a written and an oral presentation. How basic pathological responses to inflammation or injury might be the first steps on a multi-step path to malignancy is also discussed.
Arbetsformer : This is a full time course with lectures, demonstrations, microscopy exercises and a project work.
Examination : Written examination and project work.
Obligatoriska moment : Demonstration/microscopy, pathology "tour" and project work are compulsory. Absence is compensated with a written report.
Antal studenter : 16 - 30
Urval av studenter : Selection will be based on 1) documented knowledge in areas such as human tissue biology, cell biology or physiology (this kind of knowledge is a prerequisite to be able to benefit from the course). Those who already have studied pathology earlier (for example medical doctors) are not prioritized. 2) Date of admission to doctoral studies (those who have been admitted longest time ago have priority).
Övrig information :

Kursansvarig :
Barbro Ek-Rylander
Institutionen för laboratoriemedicin
08-58586444
Barbro.Ek-Rylander@ki.se

Kontaktpersoner :
Pia Laselle
Institutionen för laboratoriemedicin

pia.laselle@ki.se

Title : Tumor immunology and immune therapy of cancer

Kursnummer : 3110
Antal högskolepoäng : 1.5
Datum : 2019-11-18 -- 2019-11-22
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Oncology-Pathology
Särskild behörighet :
Kursens syfte : The purpose of the course is to deepen the knowledge in the field of tumor immunology. More specifically, to understand how the immune system is regulated in cancer and how this knowledge can be used to treat patients with cancer.
Kursens lärandemål : After the course is completed the students will be able to (1) explain important aspects of tumor immunology, (2) indicate advantages and disadvantages of different immune therapy strategies, (3) explain mechanisms of immune escape, 4) hypothesize how different immune-based regimens may affect clinical outcome in patients with cancer.
Kursens innehåll : This course covers basic and applied immunology and a current review of experimental research and clinical application of tumor immunology. Both pre-clinical and clinical aspects of cancer vaccination, adoptive cell therapy, and antibody therapy will be discussed. Development of novel therapies through modification of immune cell subsets will be presented. Features of the tumor microenvironment, cancer-associated inflammation, immune surveillance and escape, and immunosuppression will also be discussed. Planning, performing, and monitoring of clinical trials are included in the course as well. One to two days are dedicated to lectures by invited international experts from the field.
Arbetsformer : Lectures, seminars, group discussions and case-studies.
Examination : Oral group presentation and individual assignment based on case-studies. Every student will be individually assessed.
Obligatoriska moment : All lectures and teaching activities are mandatory. Absence from mandatory parts of the course will have to be compensated by other relevant activities after discussion with the course leaders.
Antal studenter : 16 - 32
Urval av studenter : Priority is given to senior PhD students at KI.
Övrig information : Lectures and group assignments all days from 9 am to 4pm. One day is devoted to invited international guest speakers.
 This course has previously been given with number 1594.

Kursansvarig :
Rolf Kiessling
Institutionen för onkologi-patologi
0851776857
Rolf.Kiessling@ki.se

Kontaktpersoner :
Andreas Lundqvist
Institutionen för onkologi-patologi

Andreas.Lundqvist@ki.se

Ulrika Edbäck
Institutionen för onkologi-patologi

ulrika.edback@ki.se

Yago Pico de Coaña
Institutionen för onkologi-patologi

yago.pico.de.coana@ki.se

Title : Basic course in tumor biology and oncology

Kursnummer : 3112
Antal högskolepoäng : 3.0
Datum : 2019-09-02 -- 2019-09-13
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Oncology-Pathology
Särskild behörighet :
Kursens syfte : The purpose of the course is to give a general overview of the molecular mechanisms that promotes the carcinogenic transformation. We aim to link the basic tumor biology concepts with the main principles of diagnosis and treatment of cancer patients in line with the modern concept of translational and personalised cancer medicine.
Kursens lärandemål : This is a basic course for all PhD-students in the field of tumor biology. After the course the students will have an understanding of the cancer problem, the modern view what cancer is, from a clinical and basic science point of view. You will get the basic foundations of cancer biology as well as aquire some ability to discuss and understand advanced problems in cancer biology. You will have an idea which are the current most important problems to solve in cancer, to improve diagnosis, prevention, treatment and quality of life. The over all aim of the course is to form a bridge between pre-clinical and clinical aspects of tumor biology and oncology for PhD students and to provide the students an understanding of all aspects of the cancer problem. This course is a basic introduction to modern cancer research and is recommended to all PhD students within basic and clinical cancer research.
Kursens innehåll : The course will describe the causes as well as the consequences of the transformation of a normal cell into its malignant counterpart, in order to create an understanding of cancer --from molecule to patient--, eventually also discussing the management and treatment of malignant diseases. The topics of the course include genetics, the cell cycle, apoptosis, immunology, diagnosis and treatment, all topics presented from the cancer perspective. There will be focus on a few malignant diseases, described in more detail serving as models for basic concepts of Tumor Biology and Oncology, including molecular genetics, curative treatment and palliative care, psychosocial aspects of cancer, ethics and epidemiology. All students will be offered a possibility to visit the inward clinical care and meet cancer patients.
Arbetsformer : The course consists of lectures, group seminars, group discussions and demonstrations. Full time during two consecutive weeks.
Examination : Written examination and group discussion with a focus on understanding of concepts, relations and how and how problems are dealt with in cancer research. Every doctoral student will be individually assessed.
Obligatoriska moment : This course is full time for two weeks. All seminars and some demonstrations are compulsory, also some lectures, as well as the written examination. Single missed occasions can be compensated during the course after discussion with te course director. Single missed occasions can be compensated for during the course after discussion with the course director.
Antal studenter : 20 - 25
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : This course has previously been given with course number 1635.

Kursansvarig :
Svetlana Bajalica Lagercrantz
Institutionen för onkologi-patologi
08-51771797
Svetlana.Lagercrantz@ki.se

Trastvägen 24

18279
Stocksund

Kontaktpersoner :
Hanna Eriksson
Institutionen för onkologi-patologi

Hanna.Eriksson.4@ki.se

Title : Molecular Immunology

Kursnummer : 3114
Antal högskolepoäng : 3.0
Datum : 2019-10-28 -- 2019-11-08
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Microbiology, Tumor and Cell Biology
Särskild behörighet : Basic knowledge in immunology corresponding to course 2302 is required.
Kursens syfte : This course is an extension of the Basic Immunology course and is suitable for students who already have some background knowledge of immunology. The aim of the course is to expose students to the molecular aspects of the immune responses.
Kursens lärandemål : After the course, the student should be able to relate their own research project to the cutting-edge developments in other areas of immunology research. Furthermore, they should be able to present novel information about an immunological problem or a specific technique.
Kursens innehåll : The course covers topics of immune cellular interactions, immune cell signalling as well as the role of epigenetics and genetics in determining immune responses and immune cell development. Students will be asked to study an immunological method or problem deeply at the theoretical level.
Arbetsformer : Lectures, seminars and oral presentations. The course is given over 2 weeks. Invited national and international lecturers give their views on selected problems, or techniques, in immunology. The seminars take off from basic facts, and after that the speakers move on to current problems, and focus on both scientific and methodological aspects. During the course the students will be expected to present orally selected topics within the field of immunology focusing on molecular events important in the development or maintenance of immune responses. At the end of the course, the students will write an essay on these methods or problems.
Examination : Oral presentation of selected topics and a final written exam based upon take home essay questions. These questions cover current problems, theories in immunology or relate the student's own research to cutting edge developments in the other areas of immunology research.
Obligatoriska moment : Oral presentation of selected topics. If a student misses the presentation, a special presentation with the course leader will be arranged.
Antal studenter : 8 - 20
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date).
Övrig information : Course will be held Monday-Friday at Biomedicum Solna Campus. Lectures will begin at 9 am and end on most days at 2 pm. Lecturers will be invited from research institutes around the world. This course had a previous number 1595.

Kursansvarig :
Benedict Chambers
Institutionen för medicin, Huddinge

Benedict.Chambers@ki.se

Kontaktpersoner :
Nadir Kadri
Institutionen för medicin, Solna

nadir.kadri@ki.se

Jonathan Coquet
Institutionen för mikrobiologi, tumör- och cellbiologi

jonathan.coquet@ki.se

Title : Forskningsetik

Kursnummer : 3118
Antal högskolepoäng : 1.5
Datum : 2019-09-24 -- 2019-10-15
Språk : Svenska
Nivå : Forskarnivå
Kursansvarig institution : Department for Clinical Science, Intervention and Technology
Särskild behörighet :
Kursens syfte : Få en inblick i och förståelse av centrala forskningsetiska teorier, principer och riktlinjer och därmed få möjlighet att reflektera över etiska aspekter av den egna och andras forskning.
Kursens lärandemål : Den forskarstuderande ska efter att ha gått kursen kunna: 1. Redogöra för forskningsetiska teorier, principer och till viss del riktlinjer, 2. Visa kunskap angående vanliga forskningsetiska problemsituationer och de etiska verktygen som kan användas för att hantera forskningsetiska konflikter Färdigheter: Den forskarstuderande ska efter att ha gått kursen kunna: 1. Analysera forskningsetiska konflikter, 2. Ge hållbara forskningsetiska argument för eller mot ett förfarande Förhållningssätt: Den forskarstuderande ska efter att ha gått kursen ha: 1. Utvecklat ett forskningsetiskt förhållningssätt till andra forskarstuderande, handledare och seniora forskare, 2. Förståelse för hur ett etiskt förhållningsätt uppfattas hos allmänheten 3. Förståelse för vilken roll forskarens egen hederlighet och integritet har
Kursens innehåll : Att ge en introduktion till etiken i samband med forskning och en orientering om dess tillämpning på problem inom det vetenskapliga området. Kursen behandlar bl.a. följande teman: centrala etiska principer, teorier och argument, forskningsetik/forskaretik, grundläggande värderingar och normer för god sed i forskningen, innehåll i och värdet av regelverk så som Helsingforsdeklarationen dess funktion, tillämpning, möjligheter och begränsningar, etikprövningar, avvikelser från värderingar, forskningsfusk och vetenskaplig oredlighet. Det informerade samtyckets historia och komponenter. Försöksdjursetisk, innefattande argument för och emot att använda olika djur för forskningsändamål samt de 3 R:en. Hantering av vetenskapligt författarskap (medförfattarskap, författarordning) och intressekonflikter i forskningen.
Arbetsformer : Föreläsningar (ca 6t), gruppövningar, seminarier(ca 8t) och muntlig och skriftlig presentation
Examination : Vi bedömer att lärandemålen för kursen är uppnådda genom examination som består av fyra delkomponenter: i) formativ bedömning i samband med aktivt deltagande i seminarier, ii) en muntlig presentation av etiska dilemman i eget eller aktuellt forskningsområde, iii) ett skriftligt PM där synpunkter från opponent på den muntliga presentationen inarbetats, och iv) opponering på annan students presentation av etiska dilemman i forskning. Godkänd kurs innebär att det framgår att erforderliga kunskaper, färdigheter och förhållningssätt har uppnåtts genom aktivt deltagande i seminarier och godkänd muntlig och skriftlig presentation av examinationsuppgiften samt opponering på annan students presentation av etiskt dilemma.
Obligatoriska moment : Obligatoriskt är att delta vid introduktionstillfället och vid seminarier. Vid frånvaro kan detta kompenseras med utökat PM skrivande och muntlig presentation för kursen eller kursgivare.
Antal studenter : 10 - 20
Urval av studenter : Urvalet baseras på 1) kursplanens relevans för den sökandes doktorandprojekt (enligt motivering), 2) datum för doktorandregistrering (där tidigare registreringsdatum har förtur)
Övrig information : Kursen ges en eftermiddag per vecka (tisdagar kl.13:30 - 17:15) under totalt fyra veckor på Karolinska Universitetssjukhuset, Huddinge (B31/K32). Kursen innehåller föreläsningar, seminarier, gruppövningar samt studenters muntliga och skriftliga presentationer. Mellan kurstillfällena finns det material att läsa enligt ett schema som ges till de antagna.

Kursansvarig :
Sigridur Kalman
Institutionen för klinisk vetenskap, intervention och teknik
08-585 817 87
sigridur.kalman@ki.se

Kontaktpersoner :
Isabel Climent-Johansson
Institutionen för klinisk vetenskap, intervention och teknik
+46 73-7121393
isabel.climent-johansson@ki.se

Title : Flow cytometry: from theory to application

Kursnummer : 3120
Antal högskolepoäng : 1.5
Datum : 2019-09-23 -- 2019-09-27
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Medicine, Solna
Särskild behörighet :
Kursens syfte : The course aims to provide doctoral students with: 1) a systematic introduction of flow cytometry, 2) an overview of flow cytometric applications in biomedical research, and 3) a hands-on opportunity of flow cytometry lab training designed for various levels of flow cytometer users.
Kursens lärandemål : Through this one-week course, the participants will acquire the knowledge of flow cytometry principles. They will know flow cytometric sample preparation and analysis, protocol set-up, major flow cytometric applications, as well as data interpretation and presentation.
Kursens innehåll : The course covers basic knowledge and main applications of flow cytometry, and contains both lectures and laboratory/group work. Experts in different fields of flow cytometric application are invited to give the lectures. The participants will be able to learn: a) Principles of flow cytometry: working mechanisms of flow cytometer; molecular and cellular probes for flow cytometry; quality control; and safty procedures and intrument maintainance. b) Basic skills: flow cytometric protocol design; sample handling and storage; data processing and analysis, and data presentation. c) Major applications of flow cytometry in biomedical research: leukocyte phenotyping, endothelial cell analysis, stem cell analysis, apotosis, platelet measurement, cell function analysis (including membrane potential, oxidative metabolism, intracellular calcium mobilization, pH, and intracellular organelles), as well as nucleic acid analysis.
Arbetsformer : The course includes 28 hr lectures and 12 hr hands-on lab work.
Examination : The exam consists of two parts: a 30 min written test on flow cytometric principles; and a 60 min hands-on lab work examining flow cytometric lab skills.
Obligatoriska moment : The participants must attend hands-on lab sections during two afternoons. The students who have missed these sections can book extra lab section time within 4 weeks to compensate the absence.
Antal studenter : 20 - 32
Urval av studenter : Selection will be based on: 1) The relevance of flow cytometry for the applicant's project (according to written motivation) 2) Urgency of flow cytometry training for the applicant's project (according to written motivation) 3) Previous application (priority given to those who have applied previously)
Övrig information : The course will be held during week 39 (9:00-16:30). Lecture hall booked: Block salen, T4:00 at Karolinska University Hospital-Solna. Lectures will be given by 14-15 lecturers, usually half of them from institutions outside KI, with one or two lecturers from abroad. All the lecturers are well-established experts in their lecture subjects of flow cytometric applications.

 The course has been given 1-2 times/year at KI for 18 years (previously with course number 1496). It has been highly appreciated by the participants through the years, with a median general satisfaction score never below 8 (out of 9; referred to paper-based course evaluation between 2001-2013), and highly remarked with the electronic course evaluation (since 2014).

 The course is given jointly by the doctoral programmes Allergy, immunology and inflamation (Aii) and Cardiovascular Research. See: https://ki.se/en/staff/doctoral-programmes.

Kursansvarig :
Nailin Li
Institutionen för medicin, Solna
08-51773996
Nailin.Li@ki.se

Clinical Pharmacology Unit
Karolinska University Hospital-Solna
17176
Stockholm

Kontaktpersoner :
Nailin Li
Institutionen för medicin, Solna
08-51773996
Nailin.Li@ki.se

Clinical Pharmacology Unit
Karolinska University Hospital-Solna
17176
Stockholm

Title : Experimental techniques in study of metabolic and endocrine disorders

Kursnummer : 3121
Antal högskolepoäng : 1.5
Datum : 2019-11-25 -- 2019-11-29
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Molecular Medicine and Surgery
Särskild behörighet :
Kursens syfte : This course will enable the doctoral student to acquire the necessary knowledge to address experimentally key points of metabolic characterization of experimental models in diabetes research.
Kursens lärandemål : After the course the students will be able i) to measure glucose transport in isolated rodent skeletal muscle; ii) to measure lipolysis in isolated adipocytes; iii) to dissect out mouse pancreatic islets and measure the insulin release; iv) to judge and analyze obtained data. The students will also be able to describe the possibilities and limitations of the above techniques.
Kursens innehåll : The course is laboratory based, aiming to give all participants hands on experience with isolation of pancreatic islets, skeletal muscle and adipose tissue. Techniques for measurement of glucose transport in isolated rodent skeletal muscle, of lipolysis in isolated adipocytes, and for studying insulin release from pancreatic islets will be covered. Theoretical and practical considerations will be presented and discussed.
Arbetsformer : The course meets for five days full time, including three full day laboratory practical sessions. The first day will consist of several lectures to give a background to the metabolic questions which will be addressed in the practical part of the course. Our aim is to provide the student with a hands on experience of each technique covered. In order to achieve this, for the laboratory work the course participants will be subdivided into smaller groups.
Examination : Summative assessment of the laboratory notebook notes from each student, of a short oral presentation of the project work, of the discussions with the course leader and the other students, and of a short summary of the project work by each group.
Obligatoriska moment : All three laboratory tasks are compulsory; as an exception, a written task could be given to a participant to compensate absence.
Antal studenter : 9 - 18
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : KI Solna, KI Huddinge, KS. 9:00 - 16:00, Monday - Friday.
 This course has previously been given with number 1559.

Kursansvarig :
Alexander Chibalin
Institutionen för molekylär medicin och kirurgi
0852487512
Alexander.Chibalin@ki.se

Kontaktpersoner :
-

Title : Human Cell Culture. Methods and Applications

Kursnummer : 3127
Antal högskolepoäng : 1.5
Datum : 2019-11-11 -- 2019-11-15
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : The institute of Environmental Medicine
Särskild behörighet :
Kursens syfte : The purpose of the course is to enable doctoral students to acquire state-of-the art knowledge and good understanding of human cell culture.
Kursens lärandemål : After the course the students should be able to: - Describe the theory and give examples of practical applications of human cell culture. - Explain basic and state-of-the-art methods applied to cell cultures. - Discuss possibilities and challenges in cell culture work.
Kursens innehåll : Cell culture reflecting stem, transit amplifying, differentiated and terminally differentiated tissue states. Monolayer and organotypic culture involving one or more cell types. Applicability of cell cultures as alternatives to laboratory animal experiments. Mechanisms regulating cell growth and viability, differentiation and apoptosis. Assessment of cell transformation to immortal and malignant phenotypes. Isolation of specific cells, e.g., epithelial cells, characterisation of cultured cells. Handling and sterile techniques, choice of materials and media for cell culture, e.g., serum-dependent vs. serum-free culture conditions. Cell cloning and gene transfer. Practical handling of cultures: thawing/freezing, passage, expansion and long-term storage. Handling of normal and tumor tissue for optimizing obtainment of cultures. High-throughput screening technologies. Tissue engineering practices. Transcriptomics, proteomics and informatics methods for biomedical research with cell lines. Discussion of participants' own culture experience and problems.
Arbetsformer : Interactive lectures, laboratory work, computer exercises and group discussions on pitfalls and possibilities with cell cultures.
Examination : Examination is in the form of a written assignment and oral presentation.
Obligatoriska moment : Participation in interactive lectures, group discussions, laboratory work and oral examination is compulsory. Absence from compulsory elements can compensated by participation at the next course occasion.
Antal studenter : 8 - 15
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : This course has previously been given with number 1202.

Kursansvarig :
Penny Nymark
Institutet för miljömedicin

penny.nymark@ki.se

Kontaktpersoner :
Johanna Bergman
Institutet för miljömedicin

johanna.bergman@ki.se

Nobels väg 13

17177
Stockholm

Title : Cardiovascular epidemiology

Kursnummer : 3132
Antal högskolepoäng : 1.5
Datum : 2019-11-18 -- 2019-11-22
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : The institute of Environmental Medicine
Särskild behörighet :
Kursens syfte : This course focuses on the application of epidemiological study designs to understand and evaluate risk factors for common cardiovascular diseases.
Kursens lärandemål : Students having successfully completed this course should be able to: - Explain the theoretical difference between risk factors and risk indicators for cardiovascular diseases; - Explain potential mechanisms underlying the effect of risk factors in the atherosclerotic process; - Discuss the differences among the different common epidemiological study designs used within the cardiovascular epidemiology research area; - Interpret study results critically by considering the different sources of bias.
Kursens innehåll : The course introduces basic epidemiological concepts and common epidemiological study designs such as cohort studies, case-control studies, clinical trials and genetic association studies. During the course choice of epidemiological study design as well as potential sources of bias will be discussed using practical examples. During the course special attention will be given to discuss: -established and emerging cardiovascular risk factors; -potential mechanisms underlying atherosclerosis and its main clinical outcomes of interest in the field of cardiovascular epidemiology; -theories and concepts related to common epidemiological study designs: case control, cohort and clinical trials; -the emerging role of biomarkers in cardiovascular research; -the role of genetic- and environmental interactions. No specific background knowledge is formally required to be eligible for the course. However, before the course begins students are recommended to do a self-assessment regarding some important basic concepts (within epidemiology and cardiology). This test will be distributed to course participants about two weeks before the beginning of the course. The students may use some of the literature indicated in the course literature to fill in gaps of knowledge if needed. On the first day of the course we will go through the test and briefly discuss together the questions and the answers.
Arbetsformer : Apart from lectures, the course will include group work and seminars in order to facilitate learning. Group tasks will include critical discussions of research articles in order for students to practice their skills in the evaluation of study designs and results. Individually, but also in pairs, students will work on exercise questions.
Examination : Learning outcomes will be assessed using 1) a short individual written examination, and 2) oral presentations of group work.
Obligatoriska moment : Individual written examination, group work on day 2 and on day 4 of the course.
Antal studenter : 8 - 25
Urval av studenter : Eligible doctoral students will be selected based on 1) the relevance of the syllabus for the applicant's doctoral project (according to written motivation), and 2) date for registration as doctoral student (priority given to earlier registration date). To be considered, submit a completed application form. Give all information requested, including a description of current research and motivation for attending, and an account of previous courses taken.
Övrig information : The course is arranged in collaboration between the Epidemiology and Cardiovascular research Programmes, please see https://ki.se/en/staff/doctoral-programmes.
 This course has previously been given with course number 2154.

Kursansvarig :
Karin Leander
Institutet för miljömedicin
08-52487498
Karin.Leander@ki.se

Box 210 (Nobels väg 13), KI

171 77
Stockholm

Kontaktpersoner :
Johanna Bergman
Institutet för miljömedicin

johanna.bergman@ki.se

Nobels väg 13

17177
Stockholm

Title : Basic Course in Medical Statistics

Kursnummer : 3134
Antal högskolepoäng : 3.0
Datum : 2019-10-14 -- 2019-10-25
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Learning, Informatics, Management and Ethics
Särskild behörighet :
Kursens syfte : The aim of the course is to introduce the basic statistical methods and the fundamental principles of statistical inference and to offer basic skills that involve hands on data analysis using statistical software.
Kursens lärandemål : The course participants shall after the course be able to; 1) perform and interpret basic descriptive statistics from frequency tables and graphical presentations, 2) perform and interpret results from basic inferential statistical analysis and tests, 3) recognize and critically examine the statistics being presented in articles within the medical field of research.
Kursens innehåll : Concepts being treated are descriptive vs inferential statistics, collection of data and study design, different types of data and level of measurement, independent and dependent samples, correlation and regression, hypothesis testing and different type of statistical errors in relation to the testing and data collection procedure. The major topics for the course are t-test, chi-square test, nonparametric test and regression analysis, and how to evaluate the assumptions for the different techniques.
Arbetsformer : This course is a Team-Based Learning (TBL) course. TBL is a specific form of learning method that integrates individual assessment and group work with immediate feedback. Focus will be on solving statistical problems in a team setting. This two weeks course consists of online preparation through video lectures and exercises, and several TBL sessions (in class meeting). The time in between TBL sessions will be spent reading the course material, and preparing for the assessment and group application exercises.
Examination : Individual and group readiness assurance tests, as well as application exercises.
Obligatoriska moment : In class attendance during TBL sessions are mandatory for passing grade. If a student misses one of the five TBL sessions a supplementary exercise will be given. If the student misses more than one TBL session it is recommended that the student takes the course at another occasion (since absence also affects the other members of the team).
Antal studenter : 40 - 45
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : This course is a TBL-course, former course number was 1383. TBL, Team-Based Learning, is a special form of learning that integrates individual work, group work and immediate feedback. Focus will be on solving statistical problems in group/team setting. The course will consist of 2-3 full days per week for two weeks. Course dates at KI Campus Solna are: October 14, 15, 17, 21, 23, 25.

Kursansvarig :
Mesfin Tessma
Institutionen för lärande, informatik, management och etik

Mesfin.Tessma@ki.se

Kontaktpersoner :
Elisabeth Löfgren
Institutionen för lärande, informatik, management och etik

elisabeth.lofgren@ki.se

Title : Epidemiology II. Design of epidemiological studies

Kursnummer : 3138
Antal högskolepoäng : 1.5
Datum : 2019-12-09 -- 2019-12-18
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : The institute of Environmental Medicine
Särskild behörighet : Knowledge in epidemiology equivalent to "Epidemiology I: Introduction to epidemiology" or corresponding courses.
Kursens syfte : The course focuses on key considerations in designing and critically interpreting different types of case-control studies, as well as matching in cohort and case-control studies.
Kursens lärandemål : After successfully completing this course you as a student are expected to be able to: - in a self-directed manner, formulate the principles of different types of common epidemiological study designs. - mainly independently, explain how a specific measure of disease occurrence and measure of association is governed by the study design. - in a self-directed manner, explain and discuss epidemiological concepts, including accuracy, in the context of different epidemiological study designs. - draw conclusions from epidemiological scientific papers and to review and criticize these regarding study design, results and accuracy. Learning outcomes are classified according to Bloom's taxonomy: knowledge, comprehension, application, analysis, synthesis, and evaluation.
Kursens innehåll : The course focuses on issues related to study design with emphasis on case-control methodology and different types of sampling strategies, study base, study efficiency, matching in epidemiological studies, induction time, interpretation of epidemiological evidence.
Arbetsformer : Lectures, group discussions and various forms of group exercises on selected topics, will be used. The course focuses on active learning, i.e. putting knowledge into practice and critically reflecting upon the knowledge, rather than memorising facts.
Examination : To pass the course, the student has to show that the learning outcomes have been achieved. Assessments methods used are group tasks (formative assessments) along with a written individual task (summative assessment).The examination is viewed as a contributing to the development of knowledge, rather than as a test of knowledge. Students who do not obtain a passing grade in the first examination will be offered a second examination within two months of the final day of the course. Students who do not obtain a passing grade at the first two examinations will be given top priority for admission the next time the course is offered.
Obligatoriska moment : The individual examination .
Antal studenter : 8 - 25
Urval av studenter : Eligible doctoral students, with required prerequisite knowledge, prioritized according to 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date). To be considered, submit a completed application form. Give all information requested, including a description of current research and motivation for attending, and an account of previous courses taken.
Övrig information : Course dates are December 9, 11, 13, 16, 18. The course is extended over time, but is still 5 full course days in order to promote reflection and reinforce learning. The individual examination will be performed as a takehome examination. This course has previously been given as 1622.

Kursansvarig :
Karin Leander
Institutet för miljömedicin
08-52487498
Karin.Leander@ki.se

Box 210 (Nobels väg 13), KI

171 77
Stockholm

Kontaktpersoner :
Johanna Bergman
Institutet för miljömedicin

johanna.bergman@ki.se

Nobels väg 13

17177
Stockholm

Title : To communicate science in different contexts with focus on oral and visual communication

Kursnummer : 3147
Antal högskolepoäng : 3.0
Datum : 2019-10-14 -- 2019-10-29
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Learning, Informatics, Management and Ethics
Särskild behörighet :
Kursens syfte : The course aims are to orally and visually present ones own research that has been adapted to different target groups and to reflect on ones own as well as ones peers presentation skills and abilities.
Kursens lärandemål : After the course the student is expected to be able to: 1. Orally present own research adapted to different target groups. 2. Understand how visuals and media can support research and presentation to different target groups. 3. Be able to critique and reflect on presentation skills and the ability to adapt to different target groups.
Kursens innehåll : During the course each participant will be given the opportunity to develop practical and theoretical knowledge in: - Communication, perception and learning - Presentation techniques - Rhetoric - Use of different media (such as posters, infographics, projection media, whiteboard)
Arbetsformer : The course design is based on reflective practice and includes self-directed learning, lectures and literature seminar to process theoretical knowledge, and practical training in presentation skills. Each course participant will perform three oral presentations, one with an infographic, and receive feedback on content, presentation skills and adaptation towards target group.
Examination : The assessment consists of two different tasks: 1. Reflective statement based in experience, feedback and research/literature within communication and learning. 2. Oral presentation in a popular scientific context supported by PowerPoint or similar. 3. A final scientific infographic in digital form revised based upon feedback from peers. To pass the course the participant needs to show evidence that they reached the learning outcomes by fulfillment of the assessment criteria.
Obligatoriska moment : Compulsory sessions are: 1. Oral presentation in a popular science context (video recorded) 2. Oral presentation with infographic in a scientific context and observe and give feedback to an oral presentation and infographic made by a peer. Absence from the compulsory sessions or assessment seminar can be compensated through supplementary activity.
Antal studenter : 14 - 20
Urval av studenter : The selection for this basic general science course will be based on your admission date to doctoral education (priority given to earlier registration date). Please make sure that you have entered the correct registration date for doctoral education in your personal profile.
Övrig information : This is a two-week course which requires time for independent work outside of scheduled class time. Scheduled class room sessions are on the following dates: 14-15, 21-22, and 28-29 October 2019. The course is given in ENGLISH. Former course number was 2144.

Kursansvarig :
Anneliese Lilienthal
Institutionen för lärande, informatik, management och etik
0852486756
anneliese.lilienthal@ki.se

Kontaktpersoner :
Karin Wrangö
Institutionen för lärande, informatik, management och etik

karin.wrango@ki.se

Title : Embryology I

Kursnummer : 3150
Antal högskolepoäng : 1.5
Datum : 2019-10-14 -- 2019-10-18
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Biosciences and Nutrition
Särskild behörighet :
Kursens syfte : The aim of the course is to instruct the participants in human reproductive biology with focus on assisted reproduction technologies (ART), as well as to give them practical experience through practical demonstrations in embryological and micro-manipulation techniques. To provide understanding of the components of culture systems used in ART, so that the student can evaluate, troubleshoot and improve existing systems.
Kursens lärandemål : At the conclusion of this course students should show a good understanding of: Laboratory environment, input materials. Physical-chemical properties of culture system. Functional characteristics of different workstations for ART and their benefits. The influence of the laboratory and clinic environment on embryo culture. The morphology of oocytes, zygotes and cleavage stage embryos as well as morulae and blastocysts. Developmental milestones. Student should be aware of the general aspects and implication of the stem cells research and the potentiality that this represent for clinical application. Morphological aspects of the blastocysts for derivation of ICM and Derivation methods. Characterization of the embryonic stem cells and the importance of the pluripotency of these cells. The different differentiation assay on stem cells and what is ongoing in this field. The production of isogonics embryonic stem cells by somatic cell nuclei transfer or therapeutic clone (SCNT). Finally the students will improve their capacity to produce coherent, logical and concise explanations of data and concepts - both written and oral, through consideration of the course material. Students will also develop their ability to criticize scientific literature related with ART and reproduction physiology in a constructive and informed fashion.
Kursens innehåll : Sperm theory (lecture) 1. Anatomy of the testis, sperm production and maturation, fertilization. 2. Cryopreservation of spermatozoa. 3. Sperm preparation for IVF and ICSI, criteria for ICSI. Embryology (Lecture) 1. Follicle growth and maturation, ovulation. 2. Cell biology and oocyte genetics. 3. Embryo development in-vitro, morphological evaluation of embryos. 4 Cryopreservation of embryos, theory and practice. 5. Embryonic stem cells. 6. Selection of embryos for transfer and cryopreservation. Technical demonstrations (Lab) 1. How to work with sperm, oocytes and embryos. 2. Manipulation and training with mouse oocytes and mouse embryo handling. 3. Micro manipulation techniques, presentation. 4. Micromanipulation training. ICSI and embryo biopsy. Genetics (Lecture) 1. Genetic aspects of prenatal diagnostics and PGD. 2. Cloning techniques.
Arbetsformer : The course runs for one week with lectures, and practical demonstration in embryo-micro manipulation techniques (intra-cytoplasmatic sperm injection and Embryo biopsy for PGD).
Examination : Individual written exam on the last day of the course.
Obligatoriska moment : The laboratory demonstrations are obligatory. The student should compensate for absence at a laboratory demonstration by presenting a literature report in agreement with the course leader.
Antal studenter : 8 - 12
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : The course will be held at Karolinska Institutet, Department of Biosciences and Nutrition, NEO Huddinge.
 This course has previously been given with number 1999.

Kursansvarig :
Jose Inzunza
Institutionen för biovetenskaper och näringslära
08-585 850 93
Jose.Inzunza@ki.se

Hälsovägen 7, Novum

141 86
Stockholm

Kontaktpersoner :
-

Title : Biostatistics I: Introduction for epidemiologists

Kursnummer : 3154
Antal högskolepoäng : 3.0
Datum : 2019-10-28 -- 2019-11-21
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Medical Epidemiology and Biostatistics
Särskild behörighet :
Kursens syfte : The aim is to introduce classical statistical concepts and methods with emphasis on methods used in epidemiology and public health.
Kursens lärandemål : After successfully completing this course students should be able to: -define the concept of probability, laws of probability, and make simple probability calculations. (S2) -suggest a statistical distribution to describe a naturally occurring phenomonen and evaluate the appropriateness of the distribution given real data. (S3) -present appropriate descriptive statistics for an epidemiological study. (S2) -explain the difference between hypothesis testing and interval estimation and the relation between p-values and confidence intervals. (S3) -suggest an appropriate statistical test for a comparison of two groups, perform the hypothesis test using standard statistical software, and interpret the results. (S3) -estimate and interpret three alternative measures of association between binary exposures and binary outcomes and discuss the relative merits of each measure for a given research question. (S3) -explain the concept of confounding in epidemiological studies and demonstrate how to control/adjust for confounding using stratified analysis. (S2) -explain the basis of the linear regression model, fit a linear regression model using standard statistical software, assess the fit of the model, and interpret the results. (S2) Learning outcomes are classified according to Bigg's structure of the observed learning outcome (SOLO) taxonomy: (S1) uni-structural, (S2) multi-structural, (S3) relational, and (S4) extended abstract.
Kursens innehåll : The course introduces classical statistical concepts and methods with emphasis on methods used in epidemiology and public health. Topics covered include: the importance of statistical thinking; types of data (nominal, binary, discrete and continuous variables); data summary measures; contingency tables; graphical representations; notions of probability; probability models (distributions); principles of statistical inference; parameter estimation (mean, proportion (prevalence), incidence and ratios); concepts of confidence intervals and hypothesis tests; and a general introduction to correlation and linear regression models.
Arbetsformer : Lectures, exercises focusing on analysis of real data using statistical software, exercises not requiring statistical software, group discussions, literature review.
Examination : The course grade is based on the two written examinations. The course is divided into two parts, and each part will be examined separately. To pass the course, the student must pass both parts. Students who fail will be offered a re-examination within two months of the final day of the course. Students who fail the re-exam will be given top priority for admission the next time the course is offered. If the course is not offered during the following two academic terms then another re-examination will be scheduled within 12 months of the final day of the course.
Obligatoriska moment : The individual written examinations (summative assessments) are compulsory.
Antal studenter : 8 - 25
Urval av studenter : Eligible doctoral students is prioritized according to 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student. Give all information requested, including a short description of current research training and motivation for attending, as well as an account of previous courses taken. Prior knowledge in any software, e.g. Stata, R or SAS is strongly recommended.
Övrig information : The course is extended over time in order to promote reflection and reinforce learning. The course will be held the dates October 28, 30, and November 4, 6, and 8 (week 1) and November 11, 13, 15, 19, and 21 (week 2).
 This course has previously been given with number 1579.

Kursansvarig :
Yudi Pawitan
Institutionen för medicinsk epidemiologi och biostatistik

Yudi.Pawitan@ki.se

Kontaktpersoner :
Gunilla Nilsson Roos
Institutionen för medicinsk epidemiologi och biostatistik
08-524 822 93
gunilla.nilsson.roos@ki.se

Title : Mechanisms of Gene Regulation in Metabolism

Kursnummer : 3157
Antal högskolepoäng : 1.5
Datum : 2019-09-30 -- 2019-10-04
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Physiology and Pharmacology
Särskild behörighet :
Kursens syfte : The students of this course will get a broad perspective of how the regulation of gene expression is linked to metabolic and endocrine regulation in different tissues. The course will also cover molecular and physiological aspects related to inter-organ communication, and how this is essential to maintain metabolic homeostasis.
Kursens lärandemål : At the end of the course students will understand and be able to discuss the different mechanisms that regulate gene expression. They will be able to describe how these processes can affect metabolic disease and disease progression. The students will be able to choose the most appropriate methodologies to study diverse aspects of gene regulation in metabolism.
Kursens innehåll : This course aims at giving students an overview of the current understanding of how metabolism and metabolic dysfunction are controlled at the level of gene regulation. During one week, students will focus on the genetic and epigenetic mechanisms that affect transcriptional output in diverse organs and tissues in health and disease situations. This will include: basic mechanisms of gene transcription, transcription factors and coregulators, mRNA splicing and genetic variability, the chromatin landscape and associated DNA and histone modifications, noncoding RNAs and regulation of gene expression. Attention will be given to single gene analysis as well as global regulation of gene expression. In each module the student will be introduced to the basic concepts in the field and analyze situations in which dysregulation of the processes under examination leads to metabolic disease. Each module will include a chapter dedicated to the presentation and discussion of current experimental approaches relevant to research in that particular field of science.
Arbetsformer : This course will consist mainly of lectures and group discussions covering both theoretical and practical questions related to the different areas of gene regulation and metabolism. Some sessions will be dedicated to problem solving and presentation of state-of-the-art methodologies relevant to research in each field.
Examination : Examination will consist of an oral presentation in which students discuss an example of metabolic disorder caused by dysregulation of gene expression and propose a research plan to further study that problem. Students will be able to discuss each other's presentations. The research plan should include appropriate methodology learned during the course.
Obligatoriska moment : Presence at lectures, group work, and final presentation and discussion is mandatory. To compensate for absence a written essay on the missed topic must be performed.
Antal studenter : 10 - 20
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : The course is held at Biomedicum (Solna Campus). This year's International speaker will be Dr. Dan Kelly, U. Penn. (USA).

Kursansvarig :
Duarte Ferreira
Institutionen för fysiologi och farmakologi

duarte.ferreira@ki.se

Kontaktpersoner :
Jorge Ruas
Institutionen för fysiologi och farmakologi
(08)52487261
Jorge.Ruas@ki.se

Title : Cellular and molecular infection biology

Kursnummer : 3158
Antal högskolepoäng : 3.0
Datum : 2019-11-25 -- 2019-12-06
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Neuroscience
Särskild behörighet :
Kursens syfte : This course is given to show students how to take inspiration from several different disciplines and techniques and apply it to their own infection biology research. Students will be given examples of cutting edge technologies and how they are applied across a broad range of infection biology fields and encouraged to think about how these techniques can be translated to new applications. The course will also teach participants to critically appraise oral presentations and to think on the spot to ask and answer questions.
Kursens lärandemål : After the course the students will have an overview of the various aspects of microbial infections with bacteria, viruses and parasites. The students will have knowledge on the level of current understanding of the cellular and molecular mechanisms used by pathogenic microbes, since the course will provide "state-of-the-art-level" presentations in selected aspects of a host-pathogen interaction. The students will be able to give examples of interdisciplinary studies in the research field of microbe-host interactions, many lectures focus on interdisciplinary themes such as microbe-cell interactions, microbial manipulation of host inflammatory responses, pathogen transmission and novel techniques to study microbe-host interactions. Analytical and critical thinking will be encouraged by the course design. The students will also have an improved capability for scientific discussions, since the course provides the possibility to interactive discussions with invited teachers, who will attend the student presentation. After the course the students will have a more holistic picture of infection biology, and hopefully they will be encouraged to apply such new information for the benefit of their further graduate training and even get significant input for their own research.
Kursens innehåll : Microbial pathogenesis, the interplay between microbes and various host responses and transmission of pathogens.
Arbetsformer : The course consists of lectures by in-house and invited speakers on various topics in the discipline of cellular and molecular infection biology. Presentations will cover basic aspects of the research topic that will provide the students with a foundation in the subject. In addition, the more advanced part of the lecture will present state-of-the-art research. Groups of students will prepare a seminar and another group will act as opponents to critically analyse the presentations. The students will subsequently participate in interactive student-driven discussions which includes the invited teacher.
Examination : The students will be assigned a series of questions based on topics that have been discussed during the course in a written examination.
Obligatoriska moment : The compulsory parts of the course are preparation and attendance of the lectures and the student group presentations. If the students cannot attend a lecture they should write a summary based on the course literature for this lecture. There will be a written examination at the end where the students should discuss a given problem within microbial pathogenesis and microbe-host interactions.
Antal studenter : 8 - 20
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : The course will be run over two weeks with lecture hours in the mornings 9-12.
 This course has previously been given with number 2176.

Kursansvarig :
Keira Melican
Institutionen för neurovetenskap

Keira.Melican@ki.se

Kontaktpersoner :
Benjamin Libberton
Institutionen för neurovetenskap

benjamin.libberton@ki.se

Title : Summer School in Big Data in Healthcare

Kursnummer : 3171
Antal högskolepoäng : 1.5
Datum : 2019-07-08 -- 2019-07-12
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Cell and Molecular Biology
Särskild behörighet :
Kursens syfte : To increase the understanding of Big Data in Life sciences, the impact of Big Data in research, the specific opportunities and the tools and technologies applied as well as challenges including ethical aspects.
Kursens lärandemål : Upon completion of the course, the doctoral students can describe important concepts in Big Data in genomics, relate them to the application of Big Data in Life Sciences, and critically evaluate important methods and technologies employed in Big Data.
Kursens innehåll : Central concepts of Big Data in genomics. Technological advances that transform the way that genetic data is generated, analysed and presented. How advances in Big Data lead to effective approaches to identify clinically actionable genetic variants for individualized diagnosis and treatment. Important methods and technologies used in Big Data. Challenges remaining.
Arbetsformer : The teaching and learning activities consist of seminars, laboratory visits, student projects and networking opportunities.
Examination : The learning outcomes will be examined individually with active participation in the discussions and the research development workshop.
Obligatoriska moment : The seminars and discussions and the research development workshop are compulsory. Compensation is according to the instructions of the course director.
Antal studenter : 5 - 5
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : This summer school course is jointly organized by King's College London, Peking University Health Science Center, Keio University and Karolinska Institutet. It is part of a rotating program where the participating universities take turn to host the summer school. In 2019, the summer school course takes place at King's College London. The course days are July 8-12. Participants should plan for arrival on July 7 and departure for July 13. The summer school organizes the accommodation for the course days, in shared rooms. The five doctoral students admitted from Karolinska will receive travel grants from KI (5000 Swedish crowns including INDI) that must be used to cover travel expenses for this summer school according to the KI travel regulations. All travel such as flights, visas and vaccinations must be organized by the participants.

Kursansvarig :
Matti Nikkola
Institutionen för cell- och molekylärbiologi

Matti.Nikkola@ki.se

Kontaktpersoner :
-

Title : Genetic Engineering Techniques

Kursnummer : 3172
Antal högskolepoäng : 3.0
Datum : 2019-08-26 -- 2019-09-06
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Microbiology, Tumor and Cell Biology
Särskild behörighet :
Kursens syfte : The functional analysis of microbial genomes from the characterization of virulence components to characterization of secondary metabolite modules relies heavily on genetic manipulation techniques. The purpose of the course is to present and implement state-of-the-art genetic techniques for the manipulation of microbial genomes in research lectures and practical sessions using model organisms and multicellular microbial behavior (biofilm formation) as a model system. This course will also provide the participants with the theoretical knowledge to develop genetic manipulation techniques in novel microbial organisms and in the context of novel model systems. The participants will be made aware of the ethical, legislative and safety aspects of genetic manipulation techniques.
Kursens lärandemål : At the end of the course the student should be able to: Knowledge/abilities: - independently carry out the applied state-of-the-art genome manipulation techniques in the microbial model system(s) - have knowledge about the various alternative random and specific genome manipulation approaches - follow and critically judge the literature on the development of specific genome manipulation tools - theoretically and practically develop genome manipulation approaches for novel model organisms - theoretically and practically develop novel genome manipulation tools - have knowledge about the biological background and molecular mechanisms of genome manipulation tools - have knowledge about genetechnically modified organisms (GMO) legislation Approaches: - deliberately choose the appropriate tool for the desired genome manipulation - deliberately develop suitable genome manipulation tools - deliberately practically implement GMO legislation for a safe working environment
Kursens innehåll : Lectures on genetic tools, their original underlying biological impact and molecular mechanisms of action. As such, the lectures will cover, for example, strategies to develop manipulation strategies for organisms, cloning strategies, CRISPR/Cas for microbial and eukaryotic genome manipulation, recombinases and recombination, transposases, DNA replication, DNA repair mechanisms and restriction-modification systems. Hands-on work including, for example, in vivo cloning, single nucleotide exchange strategies to random transposon mutagenesis will be covered.
Arbetsformer : Lectures, laboratory work, documentation, seminars, IT-applications and home work.
Examination : Examination will be in the form of written documentation of experimental results and discussion, oral presentation of results and a short written questionnaire.
Obligatoriska moment : Lectures, laboratory work and seminars are compulsory. Absence (less than 10% of course time) can be compensated for by the performance of alternative elements according to agreement.
Antal studenter : 10 - 30
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : Course hours: 9:00-16:30, Monday to Friday.

 Course address: Scheele laboratory, Scheeles väg 2, Campus Solna

 The course is given jointly by the doctoral programmes Cell Biology and Genetics (CBG) and Biology of infections and global health (BIGH), https://ki.se/en/staff/doctoral-programmes.

Kursansvarig :
Ute Römling
Institutionen för mikrobiologi, tumör- och cellbiologi
0852487319
Ute.Romling@ki.se

Kontaktpersoner :
Shady Kamal
Institutionen för mikrobiologi, tumör- och cellbiologi

shady.kamal@ki.se

Title : Clinical Trials in Cardiovascular Research

Kursnummer : 3173
Antal högskolepoäng : 1.5
Datum : 2019-12-05 -- 2019-12-11
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Medicine, Solna
Särskild behörighet :
Kursens syfte : - Improve knowledge and skills related to clinical trial planning and design as well as successful running of different types of clinical trials (observational studies, registries, randomized trials); - Provide an overview of the most recent trials in the cardiovascular arena; - Provide Good Clinical Practice (GCP) training (certificate included for those who pass)
Kursens lärandemål : After the course, the participants should: - be able to know how to design, plan and run a successful clinical trial - be able to account for the relevant regulatory aspects involved in the process of designing and running a clinical trial - be able to analyze and interpret trial data - be able to critically review literature of clinical trials - be familiar with important statistical issues (e.g. different types of adjustments for confounders, biases, how to perform subgroup analysis in trials, statistical methods for meta-analyses) related to different trial designs (e.g. observational studies, registries, randomized trials and meta-analyses).
Kursens innehåll : Lectures/Seminars/Workshops on the following topics: - Different designs of clinical trials - Requirements from regulatory agencies and post marketing surveillance - Upcoming and ongoing cardiovascular clinical trials (e.g. antithrombotics, lipidology, diabetes, heart failure) - GCP training - Statistical issues in clinical trials - How to interpret clinical trials - Things to know for junior investigators
Arbetsformer : - Lectures/Seminars - Debates on important clinical trials - Workshops - Group work - Presentation and discussion of an "home-designed" clinical trial
Examination : Assigned clinical trial design and oral presentation/discussion of a home assignment
Obligatoriska moment : Participants should attend all the sessions and be involved in group work and presentation of the home assignment. The students who have missed course sessions will be assigned extra reading and home work to compensate the absence
Antal studenter : 8 - 50
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : December 5th and 6th 2019: frontal teaching.
 December 9th and 10th: course assigned work and preparation of the exam in groups of 4 students (home-based).
 December 11th: exam.
 Location: Karolinska University Hospital or Karolinska Institutet, Solna.
 The course is run in collaboration with the European Society of Cardiology - Working Group on Cardiovascular Pharmacotherapy, which will provide well-known global trialists as speakers.

Kursansvarig :
Gianluigi Savarese
Institutionen för medicin, Solna

gianluigi.savarese@ki.se

Kontaktpersoner :
-

Title : Survey of Molecular Endocrinology

Kursnummer : 3174
Antal högskolepoäng : 3.0
Datum : 2019-10-07 -- 2019-10-18
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Laboratory Medicine
Särskild behörighet :
Kursens syfte : The purpose of the course is to provide doctoral students an in-depth understanding of the cell and molecular mechanisms as well as the fundamental principles of hormone action in tissues in health and disease. To prepare for public speaking infront of a scientific audience students are required to display their knowledge through a formal presentation on a current research topic in cellular and molecular endocrinology. An additional emphasis will be placed on how state-of-the art methodologies have been utilised to further our knowledge of endocrine signalling.
Kursens lärandemål : After successfully completing this course, students should have obtained a fundamental knowledge of molecular endocrinology and acquired the following abilities: 1. to explain the molecular mechanisms by which peptide and steroid hormones activate their receptors to provoke their biological effects 2. to comprehend how the actions of hormones are involved in both health and disease 3. to construct pathways of the endocrine systems that link control and production of hormones in specific tissues with the actions of these hormones in their respective target organs 4. to develop an in-depth comprehensive knowledge of endocrinology from a physiological, cellular, and molecular perspective
Kursens innehåll : -This course will cover current topics involved in hormone signalling at a cellular and molecular level from receptor interaction to gene response including receptor structure and function interactions with their hormone, second messengers, transcriptional regulation and autocrine and paracrine feedback signalling pathways. -The course will emphasise the critical understanding of how hormones act at the molecular level and why their signalling pathways synergise or antagonise each other under normal and pathological physiological conditions. -A survey of current topics in endocrinology will be used to exemplify the concepts of the course such as stem cell commitment and differentiation, the molecular signalling and genetics of embryogenesis; reproductive determination and differentiation; cancer stem cell dedifferentiation and carcinogenesis; hormonal regulation of gene expression, steroid and peptide hormone action via paracrine, autocrine signalling; endocrine mechanisms of receptor interaction, transmembrane and intracellular signal transduction, ionic signalling, and regulation of nuclear gene transcription. -To develop our in-depth comprehensive knowledge of endocrinology from a physiological, cellular, and molecular perspective the course will cover current methodologies applied in research.
Arbetsformer : The course will consist of cathedral-style lectures to exposure students to fundamental molecular endocrine concepts, current topic seminars to exemplify concepts, and student-led seminars and discussions to allow the students an opportunity to utilize conceptual knowledge within an informal environment.
Examination : 1. one written peer evaluation report Each student will be assigned one team led presentation to critique both presenters and journal article. The critique will be formulated in a grant style format. The student will be expected to review the specific topic within molecular endocrinology that the article emphasizes. Then create a testable question and develop a hypothesis based on the topic. Then develop a methodological approach to prove the hypothesis. The student teams that present the article will be considered experts in that topic and the student will critique their position with in the field. (Learning outcomes 1-4). 2. one final exam The final written exam will assess the fundamental principles in learning outcomes 1-4.
Obligatoriska moment : The students are expected to attend all lectures and seminars. They are expected to actively participate in discussions. Missed sessions may be replaced by written tasks adapted to the situation.
Antal studenter : 8 - 20
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : The course was previously given with the number 2381, as shown in the course evaluation below.

Kursansvarig :
Amarjit Saini
Institutionen för laboratoriemedicin

amarjit.saini@ki.se

Kontaktpersoner :
Amarjit Saini
Institutionen för laboratoriemedicin

amarjit.saini@ki.se

John Flanagan
Institutionen för laboratoriemedicin
0704816995
john.flanagan@ki.se

CMM, L8:01
Andrology and Molecular Endocrinology Units
171 76
Solna

Title : Extracellular Vesicles: Progress Towards Diagnostics and Therapy

Kursnummer : 3175
Antal högskolepoäng : 2.0
Datum : 2019-10-07 -- 2019-10-11
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Laboratory Medicine
Särskild behörighet :
Kursens syfte : It is only in the past decade that extracellular vesicles (EVs) have been discovered to mediate essential biological processes and cell-cell communication in both health and disease. In addition to characterizing their roles in vivo, these findings have also given rise to unique strategies to treat and diagnose disease. The goal of this course is to expand student's knowledge of EV diversity, biological function and potential applications.
Kursens lärandemål : After the course is completed, the student will: -Be able to describe the basics of EV biology and function, as well as a number of novel technologies for EV isolation and characterization. -Gain the skills necessary to critically evaluate publications and methods used in the EV field. -Gain an appreciation for the breadth and relevance of the EV field at present and the questions that are yet to be addressed.
Kursens innehåll : The course will cover key developments in EV biology, function and clinical application. This will begin with an introduction to EV diversity and biogenesis, as well as important examples of their in vivo roles in health and disease. It will include an overview of the most important methods used for EV isolation and characterization. Finally, we will discuss the latest strategies for utilizing EVs as tools in diagnostics and the treatment of disease. Students will play an active role in discussions with experts, as they give summaries of the latest findings in the EV field.
Arbetsformer : This course will primarily consist of interactive lectures with corresponding review papers. The information gained from these will be used for small group discussions and presentations, where the students will be required to take part in assessing the progress and pitfalls within the field. The examination will be a written report that is handed in after the course.
Examination : A written project report, consisting of two A4 pages covering one of the three topics provided by the course leaders, is expected to be handed in within one week of the course ending. We will also evaluate individuals for their contributions to group discussions and presentations. These elements will be evaluated for each student's understanding of the central concepts in EV biology, function and clinical application.
Obligatoriska moment : Students will be required to attend the lectures and discussions held during the course. The examination must be handed in within one week of course completion. Absence from any component must be compensated for by individual written assignments on the topics missed
Antal studenter : 8 - 20
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : The course will be held from 9:30am to 5:30 pm. It will be held in the conference room "Cellen" in the Novum building on the Flemingsberg campus of Karolinska Institutet; Hälsovägen 7, 4tr.

Kursansvarig :
Daniel Hagey
Institutionen för laboratoriemedicin

Daniel.Hagey@ki.se

Kontaktpersoner :
Samir El-Andaloussi
Institutionen för laboratoriemedicin

Samir.El-Andaloussi@ki.se

Title : Imaging in Neuroscience: With a Focus on Functional Magnetic Resonance Imaging Methodology

Kursnummer : 3176
Antal högskolepoäng : 1.5
Datum : 2019-11-20 -- 2019-12-06
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Neuroscience
Särskild behörighet : Background in medicine, biomedicine, biology, psychology, cognitive science, medical imaging, computational biology or a humanistic discipline where neuroimaging is used as an experimental tool.
Kursens syfte : The main purpose of the course is to provide the students with a solid understanding of the tools available to analyze brain activity data measured with functional magnetic resonance imaging (fMRI). The students will develop the ability to critically review results provided by different methods, to select the most adequate tools and experimental designs to answer different questions and to compare their relative advantages.
Kursens lärandemål : After attending the course the student should be able to: 1) follow the usual preprocessing steps of fMRI; 2) give an overview of different methods to analyze the data and explain when to use them; 3) conduct fMRI analysis using several methods; 4) describe different aspects of experimental design to have in consideration when creating a fMRI study; 5) give a brief overview of the usage of magnetic resonance imaging to study brain structure and function; 6) give a brief overview of other techniques to study brain function non-invasively and describe their relative merits and challenges.
Kursens innehåll : The course focuses on experimental design and analysis of fMRI data. We will briefly introduce the basis of the blood-oxygen-level dependent (BOLD) signal and how it is measured. Structural measures of gray and white matter will also be introduced as well as other techniques to measure functional and metabolic activity non-invasively. The image processing steps, before statistical analysis, will be explained. The application of general linear model analysis to fMRI data will be explained, including random effects analysis and correction for multiple comparisons. We will review experimental design considerations for developing a fMRI paradigm. The study of functional connectivity using fMRI data will be introduced. Finally, we will also introduce machine learning techniques and graph theoretical analysis for functional data.
Arbetsformer : The students will attend lectures, implement different steps of the data preprocessing and analysis during the hands-on sessions, present and discuss results.
Examination : The learning outcomes will be assessed throughout the course during the hands-on sessions where the students have to perform data analyses. The students will also complete a more extensive assignment based on one of the hands-on sessions. In the final day of the course the students will present and discuss their assignments with the rest of the group.
Obligatoriska moment : All parts of the course are mandatory. Absence can be compensated for by completion of an assignment on the material covered in the missed course instance.
Antal studenter : 10 - 24
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : Course schedule: Wednesday, November 20, 9.00 to 16.00; Friday, November 22, 9.00 to 16.00; Wednesday, November 27, 9.00 to 16.00; Friday, November 29, 9.00 to 16.00; Friday, December 6, 9.00 to 16.00.
 This course has previously been given with number 2985.

Kursansvarig :
Rita Almeida
Institutionen för neurovetenskap

rita.almeida@ki.se

Kontaktpersoner :
Peter Fransson
Institutionen för klinisk neurovetenskap

Peter.Fransson@ki.se

Rita Almeida
Institutionen för neurovetenskap

rita.almeida@ki.se

Jonathan Berrebi
Institutionen för klinisk neurovetenskap

Jonathan.Berrebi@ki.se

Title : Mucosal Immunology

Kursnummer : 3178
Antal högskolepoäng : 3.0
Datum : 2019-09-30 -- 2019-10-14
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Medicine, Huddinge
Särskild behörighet : Basic knowledge in immunology corresponding to the course 2302.
Kursens syfte : The primary purpose of the course is to introduce doctoral students to key concepts that underlie immune function in mucosal tissues (gut, lung) and to develop their skills to apply these concepts to their own research. Another purpose of the course is to inspire students by giving them the opportunity to interact with scientist who are performing cutting-edge research in the area of mucosal immunology.
Kursens lärandemål : After the course, the doctoral student should be able to: Understand and explain the differences between the mucosal immune system and the immune system in lymphoid organs. Discuss how the microbiota shapes immune function. Explain how altered mucosal immune function and changes in the microbiota can cause inflammatory disease. Critically evaluate experimental approaches that are used to study the mucosal immune system. Use the gained knowledge to critically assess experimental data related to mucosal immunology.
Kursens innehåll : The following main topics will be covered during the course: gut immune system, lung immune system, microbiota and its interaction with the immune system, role of immune-microbiota interaction in inflammatory diseases (with focus on gut and lung).
Arbetsformer : The teaching is mainly through lectures/seminars by the course leaders and other scientists from Karolinska Institutet who work in the field of mucosal immunology. The lectures include introduction to the various topics as well as examples of specific research projects from the lecturer's research group. This will allow the student to become familiar with experimental approaches that are used to study the mucosal immune system. In addition, there will be seminars by external speakers with expertise in mucosal immunology. At the end of each course day, there will be an interactive Question & Answer session to summarize the main points. There will also be group work by the students in the form a scientific figure quiz to learn how to interpret experimental data. Finally, one course day will consist of a practical laboratory session to illustrate how to study the gut and lung immune system.
Examination : The course examination will be in the form of individual and group assignments that are presented orally. As the individual assignment, students will be given scientific questions related to mucosal immunology. The answers are presented by each student individually as short talk presentation. There will also be group work by the students in the form a scientific figure quiz to learn how to interpret experimental data. Both individual and group presentations are peer-reviewed by the course leaders and the other students. Each student has to show that all intended learning outcomes have been reached.
Obligatoriska moment : Students are required to attend all course days, to actively participate in the group work, and to take the course exam in order to pass the course. Absence can be compensated with an individually written report.
Antal studenter : 8 - 25
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : The course is given full-time on-site at the KI Solna campus during 2 x three days (September 30-October 2 and October 8-10) with the exam on October 14 (afternoon). Students should reserve 2-3 additional days for work on assignments.
 This course has previously been given with number 3070.

Kursansvarig :
Tim Willinger
Institutionen för medicin, Huddinge

tim.willinger@ki.se

Kontaktpersoner :
Eduardo Villablanca
Institutionen för medicin, Solna

eduardo.villablanca@ki.se

Title : Bridging Science and Societal Needs Through Design Thinking

Kursnummer : 3180
Antal högskolepoäng : 4.5
Datum : 2019-09-02 -- 2020-01-19
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Neurobiology, Care Sciences and Society
Särskild behörighet :
Kursens syfte : The course aims to introduce Design thinking methodology and provide practical applications of Design thinking in improvement work and in research within complex contexts, from an interprofessional viewpoint. After the course, the student will be able to synthesize information from diverse knowledge traditions, and use a tools skillset in relevant aspects of research to a variety of societal contexts in multi-disciplinary collaborations.
Kursens lärandemål : After the course, the student will be able to: - demonstrate in-depth insights in how Design thinking can be used to explore the possibilities and limitations of science, as well as its role in society and the human responsibility for its use (Module 1) - identify relevant questions within a complex problem area, - use Design thinking as a tool to address societal challenges through interdisciplinary collaboration (Module 2) - demonstrate a critical, independent, creative and scientific rigor to identify and formulate questions; plan tasks within given time frames and equally, to assess such work of others (Module 3) - demonstrate the ability to utilize Design thinking methods to identify needs of deepened knowledge within a field (Module 3) - demonstrate the ability to make use of scientific approaches together with Design thinking in relation to specific societal challenges (Module 3)
Kursens innehåll : The course content focuses on Design thinking methodology [1] as support for both developmental work and innovation in the surrounding societal and or scientific environment. The course entail the following three modules: Module 1 An introduction to Design thinking (0.5 hp) Main content: An orientation to Design thinking theory and process methodology. Module 2 Practical application of Design thinking in improvement work (0.5 hp) Main content: The module focuses on experience based learning in groups, where students take on generically formulated societal challenges with Design thinking-process. Module 3 Design thinking and innovation within research (3.5 hp) Main content: The module focuses on Design thinking in relation to the research studies of the student. The students identify how Design thinking can be used to increase the quality and societal relevance of their research. Also, students identify different societal challenges the research studies can potentially address. [1] Design thinking is a systematic, human-centered approach to solving complex problems within all aspects of life. The approach goes far beyond traditional concerns such as shape and layout. And unlike traditional scientific and engineering approaches, which address a task from the view of technical solvability, user needs and requirements as well as user-oriented invention are central to the process. Hasso Plattner Institute Academy, 2019.
Arbetsformer : The course entails a problem oriented teaching and learning style, where students are provided with a pedagogy that enables them to take active responsibility for individual and group learning. In general, teaching will be performed through lectures, workshops and through supervision of individual tasks.
Examination : Active participation and presentation in Module 1 and 2. An individual written exam in Module 3. Each individual student needs to reach all intended learning outcomes to pass the course.
Obligatoriska moment : Compulsory sessions are: 1. Participation in compulsory group work. 2. Oral presentations. 3. Provide feedback to at least one other student's work. Absence from the compulsory sessions or assessment seminar can be compensated through supplementary activity.
Antal studenter : 8 - 20
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : The course will be run in collaboration with Södertörns högskola; Stockholms Universitet and Kungliga Tekniska Högskolan (The royal Institute of Technology). The course will take place at Openlab, Vallhallavägen 79, 11 27 Stockholm.

Kursansvarig :
Sofia Vikström
Institutionen för neurobiologi, vårdvetenskap och samhälle
08-52483802
Sofia.Vikstrom@ki.se

Alfred Nobels Allé 23, B4

14183
Huddinge

Kontaktpersoner :
-

Title : Introduction to Teaching and Learning in Higher Education

Kursnummer : 3181
Antal högskolepoäng : 1.5
Datum : 2019-09-24 -- 2019-10-24
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Learning, Informatics, Management and Ethics
Särskild behörighet :
Kursens syfte : The purpose of this course is to introduce a variety of teaching and learning methods, and to stimulate a reflective approach to teaching in order to enhance students' meaningful learning and active involvement.
Kursens lärandemål : At the end of the course we expect you to: - Be able to explain general aspects of how to facilitate student learning in different teaching situations - Be able to reflect upon own teaching experiences and use educational concepts in a discussion about teaching and learning
Kursens innehåll : During the course we will discuss and elaborate on practical issues regarding teaching and learning in laboratory, seminars and lectures. We will discuss and work with ways to challenge students and what to do to facilitate their learning. Course participants will observe (auscultate) teaching and reflect upon their experiences. We will touch upon the role of the teacher and KI teaching policies.
Arbetsformer : The course is designed to promote active learning and a variety of teaching and learning strategies will be used during the course. Examples are lectures, small group discussion, peer teaching, group work, literature studies, auscultation of teaching and reflection in groups.
Examination : To satisfactorily complete this course you must demonstrate that you have reached the learning outcomes by orally presenting your reflections of literature studies and auscultation of teaching.
Obligatoriska moment : The assessment seminar the last day of the course is mandatory. If absent, the student need to present his/her knowledge at a separate occasion.
Antal studenter : 15 - 30
Urval av studenter : Priority will be given to doctoral students who have just started or soon will be involved in teaching and that have no teacher training.
Övrig information : The course is based on theories of experiential learning, a reflective approach and learning through active participation and collaboration. In order to learn as much as possible from the course, it is important that you are present at scheduled meetings and where appropriate, be prepared for these meetings. The course is scheduled to take place on 24 September, 3 October and 24 October. In addition, time for reading and auscultation must be planned by the course participants. The course is given in English. This course is the same as the previous course number 3031-Introduction to teaching.

Kursansvarig :
Jayne Alfredsson
Institutionen för lärande, informatik, management och etik

jayne.alfredsson@ki.se

Kontaktpersoner :
Karin Wrangö
Institutionen för lärande, informatik, management och etik

karin.wrango@ki.se

Jayne Alfredsson
Institutionen för lärande, informatik, management och etik

jayne.alfredsson@ki.se

Title : Metoder för kvalitativ innehållsanalys

Kursnummer : 3182
Antal högskolepoäng : 4.5
Datum : 2019-10-01 -- 2019-11-27
Språk : Svenska
Nivå : Forskarnivå
Kursansvarig institution : Department of Clinical Neuroscience
Särskild behörighet :
Kursens syfte : Kursen syftar till att ge en utveckling av färdigheterna i innehållsanalys som teknik och metod samt metodens bredd och användning i kvalitativ forskning på längre sikt.
Kursens lärandemål : Efter genomgången kurs ska studenterna kunna att * kritiskt kommentera litteratur som förklarar utveckling och metod av innehållsanalys. * välja en adekvat design för hans/hennes egna data. * förklara de olika delarna i analysen. * utföra analysen. * kritiskt uvärdera svagheter och styrkor i analysmetoden.
Kursens innehåll : Utveckling från en kvantitativ till en kvalitativ tradition av innehållsanalys Design och val av analys Olika beståndsdelar i analysen Applicering och kritisk granskning
Arbetsformer : Kursen innehåller föreläsningar, seminarier och individuella uppgifter. Studenterna kommer att i projektarbeten under hela kursen, med stöd från föreläsningar och individuella litteratur uppgifter, applicera innehållsanalys i sin egen forskning och kritiskt reflektera på tillämpningen.
Examination : Studenterna kommer att i sina projektarbeten, i slutet av kursen, demonstrera kunskap och förståelse av innehållsanalys genom att lämna in en skriftlig rapport innehållande praktisering av analysen i förhållande till lärandemålen.
Obligatoriska moment : Kursen i sin helhet kräver aktivt deltagande av studenterna genom att medverka i olika typer av lärandeformer.
Antal studenter : 10 - 20
Urval av studenter : Urvalet baseras på 1) kursplanens relevans för den sökandes doktorandprojekt (enligt motivering), 2) datum för doktorandregistrering (där tidigare registreringsdatum har förtur)
Övrig information : Denna kurs gavs tidigare under kurskod 1814.

Kursansvarig :
Maria Jirwe
Institutionen för neurobiologi, vårdvetenskap och samhälle

Maria.Jirwe@ki.se

Kontaktpersoner :
-

Title : The Vasculature in Health and Disease - Mechanisms, Models and Targets

Kursnummer : 3184
Antal högskolepoäng : 1.5
Datum : 2019-11-11 -- 2019-11-15
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Medical Biochemistry and Biophysics
Särskild behörighet :
Kursens syfte : To educate course participants in the mechanisms that control vascular morphogenesis and function in development, physiology and various pathologies. To stimulate understanding of how developmental aspects/models can be applied to understand human disease. To give the participants a clear view on the advantages and potential drawbacks with transgenic technologies in the study of vascular biology. To present recent conceptual advances in the field as well as future challenges and promises. Altogether this will provide insight on the relation between defective function at the single cell level and systemic alteration.
Kursens lärandemål : After completing the course, the doctoral student should: -Be able to discuss central concepts in vascular biology related to blood/lymph vessel formation and function. -Be able to discuss vascular mechanisms in cardiovascular disease, including stroke, and their risk factors. -Be able to discuss the principles of common methods used in vascular biology research and evaluate the advantages and disadvantages of using these techniques.
Kursens innehåll : This course will cover: -Basic and molecular principles of how blood/lymph vessels develop, are remodeled and are functionally integrated with the surrounding tissue. -The role of blood/lymph vessels in various pathological conditions with emphasis on cardiovascular disease. -Special focus on the development and function of the blood-brain barrier (BBB) and the CNS vasculature and related pathologies, such as stroke, vascular malformations and Alzheimer. -Discussion on recent targeting strategies in cardiovascular-related disease. -Scientific methods and experimental model systems that are commonly used to study vascular mechanisms in normal and pathological conditions.
Arbetsformer : The theoretical part of the course includes lectures, group discussions and project work presentations. The practical part of the course includes demonstrations of common vascular model systems (e.g. retina preparations) and advanced imaging technologies (in vivo live imaging using two-photon confocal microscopy).
Examination : To pass the course, a participant has to show that all the intended learning outcomes have been reached including to demonstrate an understanding of scientific perspectives of basic vascular biology research. This will be assessed during: -active participation in the discussions during the course -presentation of their project work
Obligatoriska moment : Project work presentations are mandatory. In the case of motivated absence during presentations a written report covering the topic of the group presentation has to be submitted to the course leaders who will evaluate the work and either approve, or in the case of insufficient quality, ask for revision.
Antal studenter : 8 - 20
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : Monday - Friday, between 9.00 - 1600. Location: Biomedicum, KI campus Solna

---

Kursansvarig :
Daniel Nyqvist
Institutionen för medicinsk biokemi och biofysik

daniel.nyqvist@ki.se

Kontaktpersoner :
Lars Jakobsson
Institutionen för medicinsk biokemi och biofysik

Lars.Jakobsson@ki.se

Linda Fredriksson
Institutionen för medicinsk biokemi och biofysik

linda.fredriksson@ki.se

Title : Core Concepts in Global Health and Global Burden of Disease

Kursnummer : 3185
Antal högskolepoäng : 3.0
Datum : 2019-09-16 -- 2019-12-09
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Public Health Sciences
Särskild behörighet :
Kursens syfte : The purpose of the course is to provide students with a broad perspective on global health and the range of solutions to critical health issues; students will also develop their skills in critical analysis, and will develop confidence in building and presenting arguments in favour of or against various solutions to addressing health issues at a global level.
Kursens lärandemål : -Describe broad trends and inequality in the burden of disease in low, middle and high-income countries; and discuss globalisation and the drivers of these trends; -Understand how data on the global burden of disease is collected and analysed; -Describe key actors, institutions and legal regimes in global health; -Discuss challenges in implementing the health-related Sustainable Development Goals; -Discuss the role of health systems in addressing current global health challenges -Review individual projects and publications in view of the overall aims of the SDG
Kursens innehåll : -Trends in the global burden of disease, including infectious disease, non-communicable disease, mental health, accidents and violence; -Drivers of global inequalities in health; Challenges in measuring and analysing the global burden of disease; including a critical review of indicators and measurement platforms -Global health governance and financing; Service delivery, health systems and concepts of quality of care -The legal basis underpinning action in global health; -Development theories and the role of culture in global health -Historical review of key approaches and strategies, initiatives and international agendas in global health including maternal, reproductive and child health, HIV, malaria, rational drug use/drug resistance in health and beyond, humanitarian aid and other -Implementation of Sustainable Development Goals for health, particularly Goal 3; -Current challenges in global health, such as migration, climate change and Ebola.
Arbetsformer : The course is structured through a combination of lectures, group work and self-directed learning in order to provide students with the tools to be analytical and reflective about how their own PhD topics fit into the wider context of global health. The course will start with a one-week course with lectures and seminars, followed by bi-weekly seminars (with the option to follow remotely) to discuss recent publications or other key events/congresses. Peer-review of the work of fellow students and critical reading and commenting via the learning managment system is part of the course. The one-week on-site lectures will demand that students prepare selected a lecture. A reading list will be provided three weeks in advance.
Examination : Students will be asked to write a 2000 word essay on their PhD topic summarizing linkages to global context and their research addresses global health and development summarising the learning from this course and applying it to their PhD topic and to peer-review the essay of one colleague. The essay is take-home. The course is pass/fail.
Obligatoriska moment : The exam and the seminars are compulsory. If a participant cannot join in the seminars, he/she is expected to read the articles and to write a short essay to share with other students via the learning management platform.
Antal studenter : 8 - 20
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : The on-site week is from the 16th of September to the 20th of September with preparatory work to be done before the on-site week. The seminars are 14:00-16:00 on September 30th, October 14th, October 28th, November 11th, November 25th and December 9th. This course has previously been given with course number 2896.

Kursansvarig :
Claudia Hanson
Institutionen för folkhälsovetenskap

claudia.hanson@ki.se

Kontaktpersoner :
-

Title : Translational Molecular Imaging in Neurodegenerative Disorders

Kursnummer : 3186
Antal högskolepoäng : 3.0
Datum : 2019-10-14 -- 2019-10-25
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Neurobiology, Care Sciences and Society
Särskild behörighet : nej
Kursens syfte : The aim of this course is to give a state of the art overview of diverse molecular imaging techniques and their in vitro, clinical and paraclinical applications in neurodegenerative disorders with a focus on dementia. This course also provides hands-on experience through different workshops in diverse multifaceted techniques that are useful in different research fields.
Kursens lärandemål : After the course the students will understand the main pathophysiological features of neurodegenerative diseases, with a focus on dementia disorders. After the course a doctoral student shall be able to: - Account for recent advances in CSF and in vivo brain imaging biomarkers - Account for the theoretical basis of main techniques used in molecular imaging and biochemical analyses used on living subjects and biological materials - Perform key in vitro and in vivo techniques used in screening and identifying new PET tracers - Develop, evaluate and validate in vivo brain and CSF markers - Collect, process, analyze and interpret data of key techniques - Apply what they have learned to their own research work
Kursens innehåll : This course will focus on scientific approaches used to study neurodegenerative disorders. Topics for the practical experiments will include the following: demonstrations of molecular imaging techniques that are used to study function and pathological changes in the brain of living patients/animal models including PET/micro-PET, demonstrations of MRI techniques for structural brain analysis, histopathological examination of brain lesions in human post-mortem brain tissue and autoradiography, radio-ligand binding and enzyme kinetic techniques to study localization of receptors, binding potential and affinity of ligands, changes in neurotransmitter function and to correlate these with other pathological changes in the brain, quantitative assays of biomarkers and proteins involved in signaling pathways in biological fluids and in the brain using brain homogenate, human CSF and/or plasma etc. The course will also discuss, provide a deep understanding, some hands-on training on how to setup and use common in-house sensitive assays, their advantages, applicability and caveats.
Arbetsformer : The course is full time (10 days) and will be organised as an integration of lectures, combined with practical laborations, demonstrations and literature studies.
Examination : All the intended learning outcomes will be assessed by a combination of written examination, written reports for the practical workshops, and oral presentation.
Obligatoriska moment : All parts of the course are mandatory. Absence from any of these will be compensated for by extra individual assignments provided by the course organizers
Antal studenter : 10 - 15
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : The course will be held at the KI Flemingsberg Campus at the NEO building. This course has previously been given with number 2315.

Kursansvarig :
Taher Darreh-Shori
Institutionen för neurobiologi, vårdvetenskap och samhälle

Taher.Darreh-Shori@ki.se

Kontaktpersoner :
Laetitia Lemoine
Institutionen för neurobiologi, vårdvetenskap och samhälle

laetitia.lemoine@ki.se

Daniel ferreira padilla
Institutionen för neurobiologi, vårdvetenskap och samhälle

daniel.ferreira.padilla@ki.se

Elena Rodriguez-Vieitez
Institutionen för neurobiologi, vårdvetenskap och samhälle

elena.rodriguez-vieitez@ki.se

Title : Basic immunology

Kursnummer : 3187
Antal högskolepoäng : 3.0
Datum : 2019-09-02 -- 2019-09-26
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Clinical Neuroscience
Särskild behörighet : Knowledge in basic cell biology
Kursens syfte : To give doctoral students a solid knowledge and understanding of fundamental principles in immunology. All other courses in the doctoral education program Aii (Allergy, immunology and inflammation) assume that students have taken the Basic Immunology course, or otherwise have attained the same level of previous knowledge and understanding.
Kursens lärandemål : To be able to understand basic principles of innate and adaptive immunity and how different components of the immune system cooperate. To be able to relate, compare and understand experimental aspects of immune-related diseases in a clinical perspective. To be able to apply knowledge gained on the function of the immune system to analyze and discuss an immunological/clinical case (group project). To be able to present the group project and discuss the results as well as work in pairs with clinical cases.
Kursens innehåll : The course is separated into two parts. In part 1 we discuss basic immunological mechanisms within the innate and adaptive immune response. In part 2 we apply the knowledge in clinical settings such as defense against infection, autoimmune and allergic diseases or transplantation. Part 1: An overview of the immune system, T cells, B cells, Antigen presenting cells, Innate lymphoid cells, Innate vs adaptive immune responses. Part 2: Immune defense against bacterial and viral infections, Primary immunodeficiencies, Autoimmune disease, Allergy, Vaccination, Clinical Immunology, Transplantation, Tumor Immunology. Questions and discussions. Presentation of projects.
Arbetsformer : The course is given during two weeks separated into two parts. Lectures and seminars are given three days per week and remaining days are assigned for project work, a written assignment as well as reading. The project work and written assignment require studies between the two course parts, including meetings with mentors. On the last day of the course the project work will be presented orally. Course literature (Abbas) is handed out at the course start. An immunological quiz is connected to the different chapters in the book, so that the student will be able to digest the relatively big material. The purpose of dividing the course into two parts is that the participants should have time to thoroughly study the literature from part 1 (fundamental immunological mechanisms) before teaching of the applied immunology in part 2 starts.
Examination : The student will be examined on both the project work and the written assignment. The project work will be evaluated by the group project mentor and by the course organizers during the oral presentations of the work. At this occasion special attention is given to all students' active participation and contributions to the discussions. The individual written assignment is evaluated by the course organizers and, with respect to proposing new research ideas related to the students´ own PhD projects, by their own supervisors.
Obligatoriska moment : All activities included in the course are compulsory. Absence needs to be compensated for in agreement with the course director.
Antal studenter : 10 - 25
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date).
Övrig information : The course is divided into two sessions with 3 days of lectures each, September 2nd to 4th (Monday to Wednesday) and September 24th to 26th (Tuesday to Thursday). In between these days of lectures the students work on both a group project and an individual written assignment, including meetings with mentors and literature studies. The first meeting with mentors should ideally take place on either the 5th or 6th of September (Thursday or Friday, respectively), so students are expected to have time to devote to the course outside the official lecture days.
 Teachers include specialists in different fields of immunology including both basic and clinical researchers. We will use the Abbas "Basic Immunology" as the main course textbook, but literature also includes review papers, handouts etc. The textbook is free and will be made available two weeks before the course starts (please contact the organizers). The course location is at the Center for Molecular Medicine (CMM), Karolinska University Hospital, Solna.
 This course has previously been given with number 2302.

Kursansvarig :
Andre Ortlieb
Institutionen för klinisk neurovetenskap

Andre.Ortlieb@ki.se

Kontaktpersoner :
-

Title : Tumor Microenvironment

Kursnummer : 3188
Antal högskolepoäng : 1.5
Datum : 2019-11-04 -- 2019-11-08
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Microbiology, Tumor and Cell Biology
Särskild behörighet : Basic course in tumor biology and oncology or corresponding knowledge.
Kursens syfte : The course will provide the students with a basic knowledge within the expanding field of tumor microenvironment by describing the interactions of tumor cells with tumor associated cells as well as with the extracellular matrix (ECM). The students will be enabled to develop understanding of pros and cons with in vitro 2D and 3D cell co-cultures, ex vivo models and in vivo tumor models.
Kursens lärandemål : After completion of the course, the students should be able to: - Describe the main cellular and acellular components of tumor microenvironment (TME). - Discuss the mechanisms of TME communication. - Describe which non-malignant and tumor associated cells are known to affect the tumor initiation, progression and therapy responses. - Understand how TME communication relates to fibrotic/desmoplastic and inflammatory responses, and hypoxia & angiogenesis. - Consider how the TME processes can contribute to the malignant growth, metastatic cancer progression and drug resistance. - Understand pros and cons of different types of cell and tissue (co-)culture models (including 3D organoids) and in vivo tumor models. - Have insights in key clinical implications regarding the field.
Kursens innehåll : The course is designed for PhD students with an interest in tumor biology. The course will address the key concepts of cancer associated fibroblasts, endothelial cells, pericytes, and inflammatory & immune cells, as well as the ECM and associated factors, and hypoxia, and how all of these can differ according to the type, stage, and location of the cancer. These TME properties will be further related to tumor metabolism, growth, invasion, metastasis, angiogenesis and lymphangiogenesis, as well as drug responses. Clinical applications within the field are presented during the course.
Arbetsformer : The course is designed for PhD students with an interest and personal involvement in tumor biology. It consists of lectures by experts in the field and group discussions based on problem based learning on topics related to the course, with the specific aim to stimulate an active participation from the course participants together with course lecturers. The key topics will be summarized and discussed daily in a short concluding summary session. Students are expected to discuss the developments of the TME field and present their gained knowledge and views on the central issues of pre-clinical versus clinical use of TME targeting therapies.
Examination : The course assignments will consist of 1) organization of one short summary session with a pre-assigned group of students and 2) oral discussion of a problem-based case. For the first assignment, formative assessment will be provided by course organizers and the other co-organizing students in the forms of a written comment about the session and group performance. The course organizers will serve as moderators in the summary sessions. The assessment of the second assignment will be performed on an individual basis. One or two students will be appointed as reviewer(s) to provide peer feedback for the presenter, in line with concept of formative assignment. The course organizers will lead a written examination, and will be responsible for summative individual assessment.
Obligatoriska moment : Attendance to all the activities of the course and the written examination are mandatory. Absence from mandatory parts of the course will have to be compensated for by other activities after discussion with the course leaders.
Antal studenter : 8 - 32
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : The course will be organized as a full day course with lectures, group discussions and summary sessions at 9-17 Mon-Fri in Biomedicum, Karolinska Institutet. The course was previously given as 2671.

Kursansvarig :
Kaisa Lehti
Institutionen för mikrobiologi, tumör- och cellbiologi

kaisa.lehti@ki.se

Kontaktpersoner :
Jordi Gonzalez-Molina
Institutionen för mikrobiologi, tumör- och cellbiologi

jordi.gonzalez-molina@ki.se

Kaisa Lehti
Institutionen för mikrobiologi, tumör- och cellbiologi

kaisa.lehti@ki.se

Title : Beyond Gene Expression: Epigenetics in the Cardiovascular System

Kursnummer : 3189
Antal högskolepoäng : 1.5
Datum : 2019-10-21 -- 2019-10-25
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Medicine, Solna
Särskild behörighet : The course is designed for students who have prior knowledge of cardiovascular physiology and molecular biology.
Kursens syfte : The purpose of the course is to enable doctoral students to obtain in-depth knowledge on new scientific advancement in cardiovascular research, and hands-on experience on methodology/techniques of epigenetics, including histone modulations, DNA methylation, posttranscriptional regulations of non-coding RNAs.
Kursens lärandemål : At the end of the course the participant should be able to: - Be able to describe the physiological and pathological roles of epigenetic modulation in the cardiovascular system. - Be able to design a preliminary study to observe the epigenetic alterations in cardiovascular diseases, either as biomarker or therapeutic targets. - Have obtained knowledge on how to practically perform, analyse and interpret in vitro, ex vivo experiments for epigenetic studies (ISH, transfection, Incucyte, et.al). -Be able to show a basic understanding on how to analyse the data from Chip-seq and RNA-seq data (via analytical assignments on example data).
Kursens innehåll : The course is designed to enable acquisition of theoretical knowledge about epigenetic modifications in the cardiovascular system, as well as about the applications of epigenetic tools to investigate the development of various cardiovascular diseases. There is also a significant practical component where students will get hands-on bench work experience in the most common models used including Incucyte, in situ hybridization, non-coding RNA and protein co-staining, vascular function evaluation and data analysis.
Arbetsformer : The course is a theoretical and practical training combination, where lectures/group discussions and laboratory/practical demonstrations are integrated. Time is also allocated for discussing laboratory results and lectures.
Examination : All the learning outcomes of the course have to be reached to pass the course. The final grade (pass or fail) will be based on: - Summative assessment of the contributions during the discussions that are part of the course. - Group presentation at the final seminar where different research topics regarding epigenetic modifications will be discussed, i.e. disease aspect to be investigated, and how the results of appropriate experiments are analysed and interpreted.
Obligatoriska moment : Full attendance to both theoretical and practical lessons to understand the course content and to pass the course. The students who have missed the group work sessions can book extra session time within four weeks to compensate the absence.
Antal studenter : 8 - 20
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : Lectures will be held in room J3:20 Sven Ivar Seldingen, 3rd floor, Bioclinicum, Campus Solna. Practical sessions will be held in Bioclinicum J8:20, 8th floor, and KERIC (Karolinska Experimental Research and Imaging Center), 4th floor, Campus Solna.
An external speaker will give a keynote lecture.

Kursansvarig :
Hong Jin
Institutionen för medicin, Solna

hong.jin@ki.se

Kontaktpersoner :
Zhichao Zhou
Institutionen för medicin, Solna

zhichao.zhou@ki.se

Hong Jin
Institutionen för medicin, Solna

hong.jin@ki.se

Title : Nucleic Acid Chemistry and Therapy

Kursnummer : 3190
Antal högskolepoäng : 3.0
Datum : 2019-10-08 -- 2019-10-24
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Biosciences and Nutrition
Särskild behörighet :
Kursens syfte : The purpose of the course is to provide participants with good and up to date knowledge of nucleic acid chemistry and oligonucleotide therapy. The intention is to increase general knowledge about nucleic acids and how these can undergo different reactions as well as how oligonucleotides are chemically synthesized and modified for therapeutic or other use. We expect that this will stimulate and inspire the students in their own research whether they work on nucleic acid biology, therapy, analyse nucleic acids or use oligonucleotides as tools for investigations. It is an intention to increase understanding of nucleic acids, how these molecules work and how they can be used in therapy. In addition, knowledge on how oligonucleotides are synthesized and how these can be modified will enhance the insight and enable the students to improve their use of oligonucleotides as tools or potential therapeutics.
Kursens lärandemål : At the end of the course the students - should be able to explain the underlying chemistry of nucleic acids and how these can react at different parts of the structure. - should be able to explain how oligonucleotides can be synthesized and modified and why currently used modifications and conjugations are done. - should be able to make selections of modifications and to design oligonucleotides, for use as potential therapeutics.
Kursens innehåll : Introduction to Nucleic acid chemistry and nomenclature Reactions at nucleic acid bases Reactions at ribose and deoxyribose sugars Reactions at and nomenclature of phosphates and phosphate modifications Methods for synthesis of native and modified oligonucleotides Common modifications used for oligonucleotide therapy Introduction to Oligonucleotide therapy Antisense, pre-mRNA Splice-switching, siRNA, mRNA and DNA-targeting ON therapy The problem of oligonucleotide delivery in therapy
Arbetsformer : The course consist of lectures by experts and seminars in the presence of experts on different aspects of nucleic acid chemistry and oligonucleotide therapy as well as workshop activity including presentations by the students. Additional home work combined with individual and group activities in the class room will be a part of the learning.
Examination : Oral presentations on workshops as well as a written account with specific course related questions.
Obligatoriska moment : The lectures, seminars and workshop activities with student presentations will be compulsory. Absence will be compensated by extra assignments. The student will also submit reports from a workshop in written form for review and approval, in connection to the student presentations.
Antal studenter : 8 - 24
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information :

Kursansvarig :
Roger Strömberg
Institutionen för biovetenskaper och näringslära
0852481024
Roger.Stromberg@ki.se

Neo, Hälsovägen 9

14183
Huddinge

Kontaktpersoner :
-

Title : Sex and Gender Aspects of Clinical Cardio and Cerebrovascular Research

Kursnummer : 3191
Antal högskolepoäng : 1.0
Datum : 2019-11-11 -- 2019-11-15
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Molecular Medicine and Surgery
Särskild behörighet :
Kursens syfte : To provide course participants with an orientation of gender medicine, an in-depth knowledge of sex and gender aspects of clinical cardio and cerebrovascular research including stroke, and let them gain familiarity with different research methodologies used in this field.
Kursens lärandemål : 1. To be able to show a general understanding of sex and gender aspects in cardiovascular and cerebrovascular stroke as a clinical entity and of the research methods used in clinical research in this field. 2. After the course the PhD students should be able to apply a sex and gender difference perspective in planning, implementing and evaluating the quality of research projects in the field.
Kursens innehåll : The course module will provide course participants with in-depth knowledge of specific areas of sex and gender differences in cardio and cerebrovascular research as well as an overview of the state of the art of specific fields in the area. Also, the participants will be encouraged and have the possibility to apply these perspectives on their own projects. Critical review of contemporary key papers in the field will be performed in adjunct to lectures and seminars.
Arbetsformer : - Lectures - Seminars - Individual work - Presentation and discussion of assigned individual work
Examination : Presentation of a project of choice with an applied sex or gender perspective. Critical evaluation and discussion of the other participants presentations.
Obligatoriska moment : The participants must attend the seminars, critical reviews of papers and the oral exam. Absence during seminars and critical review of papers cannot be compensated for. The students who have missed the oral examination can book extra session time within four weeks to compensate the absence.
Antal studenter : 10 - 25
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : The course will include the possibility to use one of your own projects, and apply a sex- and genderperspective under supervision.
 The course will be held at Karolinska, Solna and KI.
 Previous course number was 2961.

Kursansvarig :
Rebecka Hultgren
Institutionen för molekylär medicin och kirurgi

Rebecka.Hultgren@ki.se

Kontaktpersoner :
-

Title : Presentera och diskutera forskning med det omgivande samhället, med fokus på elever i låg- och mellanstadiet

Kursnummer : 3192
Antal högskolepoäng : 1.0
Datum : 2019-09-02 -- 2020-01-17
Språk : Svenska
Nivå : Forskarnivå
Kursansvarig institution : Department of Cell and Molecular Biology
Särskild behörighet :
Kursens syfte : Kursens syfte är att ge deltagarna kunskaper och färdigheter för att kunna presentera och diskutera kring forskning och vetenskap och dess betydelse för samhället, med skolbarn som målgrupp.
Kursens lärandemål : Efter avslutad kurs kommer kursdeltagarna att visa förmåga att presentera och diskutera forskning och forskningsresultat i dialog med samhället på ett målgruppsanpassat sätt, med ett särskilt fokus på målgruppen skolelever. Kursdeltagarna kommer att ha förutsättningar att kunna bidra till samhällets utveckling och stödja andras lärande.
Kursens innehåll : Kursen är ett nära samarbete med Berättarministeriet samt ett antal skolor och deras lärare. Programmet handlar om att väcka nyfikenhet på naturvetenskap och forskning hos skolelever, och att sprida intresse och kunskap kring vetenskapligt arbete, samt lyfta kritiskt tänkande. Deltagarna på kursen utbildas i arbetssätt och metoder att väcka intresse, presentera och diskutera forskning för och med skolelever.
Arbetsformer : Inläsning av material, informationsmöten och genomgångar. Deltagarna engageras i aktiviteter där skolelever besöker Karolinska Institutet och lär sig om forskning genom presentationer, och egna aktiviteter under de deltagande doktoranderas (kursdeltagarnas) handledning. Kursdeltagarna får själva handledning och återkoppling om sina insatser innan, under och efter elevernas besök vid Karolinska Institutet.
Examination : Lärandemålen examineras med individuellt deltagande vid elevernas besök till Karolinska Institutet, samt med en individuell rapport från kursdeltagarna som innehåller en reflektion kring betydelsen och praktiken av att sprida kunskap om forskning och vetenskap i samhället, och hur detta kan bidra till utveckling av individer och samhället i stort.
Obligatoriska moment : Alla genomgångar, diskussionstillfällen med eleverna, samt återkopplingstillfällen är obligatoriska. Frånvaro från obligatoriska moment kompenseras enligt anvisningar från kursledningen.
Antal studenter : 10 - 15
Urval av studenter : Urvalet baseras på 1) kursplanens relevans för den sökandes doktorandprojekt (enligt motivering), 2) datum för doktorandregistrering (där tidigare registreringsdatum har förtur)
Övrig information : Kursen går på deltid med ett fåtal obligatoriska genomgångar och aktiviteter. Schema med datum och tid meddelas i god tid före kursens start. Kursaktiviteterna sker på Berättarministeriet på Norrmalm i Stockholm samt på Biomedicum i Solna. Mer information om Berättarministeriet och deras aktiviteter finns på https://www.berattarministeriet.se.

Kursansvarig :
András Simon
Institutionen för cell- och molekylärbiologi

Andras.Simon@ki.se

Kontaktpersoner :
Eva Hedlund
Institutionen för neurovetenskap

eva.hedlund@ki.se

Retzius v. 8

17177
Stockholm

Matti Nikkola
Institutionen för cell- och molekylärbiologi

Matti.Nikkola@ki.se

Title : Basic Principles in Clinical and Translational Research

Kursnummer : 3194
Antal högskolepoäng : 1.5
Datum : 2019-10-14 -- 2019-10-18
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Oncology-Pathology
Särskild behörighet :
Kursens syfte : The course aims to provide an overview of the basic principles as well as the design, conduct and ethical aspects of clinical trials. The overall purpose is to provide the PhD student with knowledge to understand how clinical trials need to be performed and to gain insight on how to review reports of clinical trials results. Furthermore, it aims to enable the PhD student to earn powerful tools to use in future projects and planning of trials. In addition, the PhD student will be able to design studies with a strong translational focus.
Kursens lärandemål : At the end of the course the students need to be able to show - a thorough understanding of the basic principles of clinical trials - the ability to discuss and understand the most common trial designs and appraise reports of other trials. - to understand and be able to debate on potential ethical aspects of clinical trials
Kursens innehåll : This course is a basic introduction to design, conduct and assessment of clinical trials and it is recommended to all PhD students within basic, epidemiologic and clinically oriented research fields. The course will describe different trial designs, strengths and pitfalls and practical issues when planning and conducting translational studies in various medical disciplines. Discussion on basic principles of reporting translational trials, good clinical practice, regulatory affairs and ethics.
Arbetsformer : The course consists of lectures, group seminars and individual work. Field visit at clinical and translational research facilities.
Examination : To pass the course the students must show that they have reached the learning outcomes of the course. This will be assessed by a written individual examination with a focus on understanding of concepts, principles, practical and ethical issues of clinical trials.
Obligatoriska moment : All seminars and demonstrations are compulsory, also some specified key lectures, as well as the written examination. Single missed occasions can be compensated for with an additional task during the course after discussion with the course director.
Antal studenter : 10 - 20
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date).
Övrig information : The course will be held daily within the span of one week, from Monday to Friday 09:00-16:00.

Kursansvarig :
Alexios Matikas
Institutionen för onkologi-patologi

alexios.matikas@ki.se

Kontaktpersoner :
Antroula Papakonstantinou
Institutionen för onkologi-patologi

antroula.papakonstantinou@ki.se

Title : Clinical Aspects of Cardiovascular Research

Kursnummer : 3195
Antal högskolepoäng : 1.5
Datum : 2019-10-14 -- 2019-10-18
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Medicine, Solna
Särskild behörighet :
Kursens syfte : The doctoral students will learn clinical aspects of cardiovascular research. This course is designed to provide an overview of cardiovascular medicine and to enhance the understanding of current clinical management of cardiovascular diseases. The course will be especially valuable for students in the cardiovascular research field that do not have an education in medicine.
Kursens lärandemål : To understand various cardiovascular pathologies from a clinical perspective. To account for current clinical management of cardiovascular disorders. To illustrate and discuss the challenges of future improvements in diagnosis and clinical care related to the cardiovascular disorders addressed. To adapt knowledge of cardiovascular physiology by analyzing and discussing a clinical case and relating it to cardiovascular pathologies. To be able to relate, compare and understand how different components of the cardiovascular system interact with other organ systems and diseases.
Kursens innehåll : The course contains the following topics: cardiovascular physiology with focus on cardiac and smooth muscle cell contraction, cardiovascular disease genetics, ischemic heart disease, hypertension, heart failure, and implications of diabetes and systemic inflammatory disorders on cardiovascular diseases.
Arbetsformer : The course is a full-time one week course. The teaching is mainly in lecture/seminar form but also includes project work with group discussions. Time will be dedicated for an individual task focusing on different cardiovascular diseases. The task will be presented at the end of the course followed by open discussions.
Examination : All learning outcomes of the course have to be reached to pass the course. During oral presentations special attention is given to clinical relevance and translational research methodologies. At the end of the course, a short written exam will recapitulate the contents of the course.
Obligatoriska moment : All elements of the course, including seminars, group discussions and individual presentations, are compulsory. In case of absence from theoretical parts, individual assignments have to be completed and then approved by the course organizer.
Antal studenter : 8 - 25
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : Course location will mainly be on Karolinska University Hospital in Solna. Designated time is 9:00 to 16:00 Monday to Friday including time for individual studies and group work.

Kursansvarig :
Anton Gisterå
Institutionen för medicin, Solna

anton.gistera@ki.se

Kontaktpersoner :
Nailin Li
Institutionen för medicin, Solna
08-51773996
Nailin.Li@ki.se

Clinical Pharmacology Unit
Karolinska University Hospital-Solna
17176
Stockholm

Title : Global Health Economics

Kursnummer : 3196
Antal högskolepoäng : 3.0
Datum : 2019-09-30 -- 2019-10-11
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Public Health Sciences
Särskild behörighet : Students must be familiar with the basics of health economics.
Kursens syfte : The aim of this course will be to learn how health care systems are financed around the world, the principles of Universal Health Coverage (UHC) and financial protection and how it can be measured. Different perspectives of economic evaluations and the four most common types of health economic analysis (cost analysis, cost-effectiveness analysis, cost-utility analysis and cost-benefit analysis) will be described and brief introduction to modeling in health economics will be given. It will also focus on the unique challenges found in performing economic evaluations in low and middle income countries (LMICs) such as validated tools to collect effectiveness/utility measurements and collecting cost data. The course will also provide an introduction to behavioral economics and its potential role in public health policy.
Kursens lärandemål : At the end of the course the students will be able to: - Describe different kinds of health care financing systems around the world - Describe and discuss the definitions, key methods, measurements and indicators of UHC, financial protection and patient costs (out-of-pocket (OOP) expenditures, opportunity costs and catastrophic costs) - Explain different perspectives for economic evaluations (health care system, government, third party payer, societal, etc) - Describe common health economic evaluation methods. - Explain advantages and disadvantages with the different methods and discuss which method that would be preferable in different low and middle income settings. - Critically assess different tools to collect effectiveness and utility measurements - Independently write a plan for a health economic evaluation of a specific intervention in health care. - Understand the basic principles of health economic modeling - Describe different kinds of socio-economic outcomes related to patient costs - Explain key behavioral economics concepts that are most relevant for public health policy
Kursens innehåll : Health economics is the use of economic theory and methodology to analyze how scarce resources are used in the health sector and in relation to health. OOP spending and opportunity costs is increasingly recognized as an important barrier to accessing health care, particularly in LMICs where a large portion of health expenditure comes from OOP payments and social safety net systems are often weak. Emerging UHC policies prioritize reduction of poverty impact such as catastrophic and impoverishing healthcare costs. Poverty impact is therefore increasingly evaluated alongside and within economic evaluations to estimate the impact of specific health interventions on poverty. In addition, the course will explore and describe the main kinds of health economic perspectives and evaluations (i.e. cost analysis, cost-effectiveness analysis, cost-utility analysis and cost-benefit analysis) and the challenges that are unique to LMIC settings when it comes to conducting health economic evaluations. This course will highlight methodological challenges in collecting effectiveness/utility and cost data in LMIC contexts. For example, where routine cost data are unavailable, economic evaluations in LMICs require extensive primary cost data collection. The course will also give an introduction to how modeling techniques can be used in health economics. The basic assumptions in neoclassical economics (e.g. individuals act to maximize their long-term interest, have stable preferences, and are consistent rational actors) has served as an important foundation in predicting behavior. In the past, this model has influenced the design of public health policy, specifically around risk perceptions (gruesome images on cigarette packages), taxing harmful substances like tobacco and alcohol, and subsidizing preventive care (e.g. vaccinations). However, these traditional economic incentives sometimes prove ineffective. Behavioral economics differs from mainstream economics in that it focuses on the ways in which rationality may be limited or bounded, and influenced by factors such as impulsiveness, limited willpower, social norms, and the context in which choices are made. The course will provide an introduction to behavioral economics and its potential role in public health policy. The course provides training in health economic analyses and presentations, both written and oral.
Arbetsformer : The course will have a blended learning approach with the combination of face-to-face lectures, online practical assignments/discussions, self-study and oral presentations and a final written economic evaluation plan. Face-to-face lectures and other activities will be conducted once a week for a period of four weeks. Once a week lectures will allow the students to reflect on the given material and to apply this new knowledge to the practical assignments. Practical assignments in the form of discussions and exercises will be discussed with the group (if applicable online) and peer feedback will be given. Teaching is given in English.
Examination : Course assignments, oral presentation and take home examination (the final written economic evaluation plan) will be graded as fail or pass. In order to pass the course, the student need to pass the assignments and the take home examination. The course assignments will guide the students through the steps needed to design a health economic study. The aim of the examination is to test the students on what they have learned over the duration of the course and how well they can apply it. The take home exam will have to be submitted through the KI online learning platform one week after the end of the course.
Obligatoriska moment : Participation in the online practical assignments, the final written economic evaluation plan, giving feedback on peer proposal plans and participation in the final discussion will be mandatory.
Antal studenter : 8 - 20
Urval av studenter : Eligible doctoral students, with required prerequisite knowledge, will be selected based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date).

Övrig information : The course will be held on the Solna Campus.

Kursansvarig :
Kristi Sidney Annerstedt
Institutionen för folkhälsovetenskap

kristi.sidney@ki.se

Kontaktpersoner :
Kristi Sidney Annerstedt
Institutionen för folkhälsovetenskap

kristi.sidney@ki.se

Title : Basic Cardiovascular Pathology

Kursnummer : 3197
Antal högskolepoäng : 1.5
Datum : 2019-11-25 -- 2019-11-29
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Medicine, Solna
Särskild behörighet :
Kursens syfte : The course is designed for doctoral students performing cardiovascular research that do not have an education in medicine and/or want to update their knowledge of cardiovascular diseases. The students will learn the basic concepts in cardiovascular physiology and pathology. The course will provide an overview of cardiovascular medicine and give the possibility to gain up to date knowledge in the field. In this way the doctoral students will be prepared for more advanced courses in the Cardiovascular Research program.
Kursens lärandemål : To understand basic principles of cardiovascular physiology and pathology and how different components of the cardiovascular system cooperate. To be able to relate, compare and understand experimental aspects of cardiovascular diseases. To be able to present and explain experimental design of cardiovascular disease models. To illustrate and discuss the challenges of future improvements in drug development related to the cardiovascular diseases. To adapt knowledge of cardiovascular physiology and relating it to cardiovascular pathologies.
Kursens innehåll : The course contains the following topics: cardiovascular biology and development, cardiovascular physiology, cardiovascular disease genetics, regeneration of the cardiovascular system, vascular inflammation, and implications for other inflammatory disorders.
Arbetsformer : The course is a full-time one week course. The teaching is mainly in lecture/seminar form but also includes project work with group discussions. Time will be dedicated for individual assignments focusing on different topics of cardiovascular pathology. Students will present their assignments at the end of the course followed by open discussions.
Examination : All the learning outcomes of the course have to be reached to pass the course. During oral presentations special attention is given to scientific correctness. At the end of the course, a short written exam will recapitulate the contents of the course.
Obligatoriska moment : All elements of the course, including seminars, group discussions and individual presentations, are compulsory. In case of absence from theoretical parts, extra assignments have to be completed and then approved by the course organizers.
Antal studenter : 8 - 25
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : Course location will mainly be on Karolinska University Hospital in Solna. Designated time is 9:00 to 16:00 Monday to Friday including time for individual studies and group work.

Kursansvarig :
Anton Gisterå
Institutionen för medicin, Solna

anton.gistera@ki.se

Kontaktpersoner :
Nailin Li
Institutionen för medicin, Solna
08-51773996
Nailin.Li@ki.se

Clinical Pharmacology Unit
Karolinska University Hospital-Solna
17176
Stockholm

Title : Melanoma - From Basic Science to Clinical Application

Kursnummer : 3198
Antal högskolepoäng : 1.5
Datum : 2019-10-07 -- 2019-10-11
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Oncology-Pathology
Särskild behörighet : Basic knowledge of cell biology is required.
Kursens syfte : The course aims to provide an overview of melanoma biology and molecular characterization (at different stages), epidemiology, translational research, current treatments of melanoma and the challenges with intrinsic/acquired therapy resistance. The overall purpose is to obtain a deeper understanding of different aspects of melanoma.
Kursens lärandemål : After completion of the course the students should have a basic knowledge of melanoma biology to be able to understand and discuss potential ways to improve prevention, diagnosis and treatment of the melanoma disease. The students will also develop an understanding of pros and cons with in vitro and in vivo melanoma models.
Kursens innehåll : The course will be a broad introduction of melanoma from basic science to clinical application. The topics of the course include diagnostics, genetics, heterogeneity, immunogenicity and translational research. Appropriate in vitro and in vivo preclinical models will be presented and discussed. Clinical applications within the field will also be presented during the course.
Arbetsformer : The course consists of lectures and group discussions based on problem based learning on topics related to the course, with the specific aim to stimulate an active participation from the course participants together with course lecturers/organizers.
Examination : The course assignment will consist of an individual assessment of the problem-based group discussion. One or two students will be appointed as reviewer(s) to provide peer feedback for the presenter, in line with concept of formative assignment. The course organizers will lead the examination and be responsible for summative individual assessment.
Obligatoriska moment : Attendance at the group discussions is compulsory. Absence from compulsory parts of the course can be compensated by other activities after discussion with the course organizers.
Antal studenter : 8 - 25
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information :

Kursansvarig :
Suzanne Egyhazi Brage
Institutionen för onkologi-patologi

Suzanne.Egyhazi.Brage@ki.se

Kontaktpersoner :
-

Title : Key Concepts and Principles for Design and Critical Interpretation of Nordic Register-Based Studies

Kursnummer : 3199
Antal högskolepoäng : 3.0
Datum : 2019-09-23 -- 2020-01-17
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : The institute of Environmental Medicine
Särskild behörighet :
Kursens syfte : Nordic registers constitute individual-level data in registers and databases, so-called microdata, covering vital events, health aspects, demographic and socioeconomic indicators for the entire populations in the Nordic countries over a period of decades. These features make the combination of Nordic register data an indispensable and powerful resource for answering a multitude of research questions, in a time- and cost-effective manner, and can ultimately provide policy-makers and key actors with new knowledge. The purpose of this two-week course is to provide participants with knowledge on how registers can and should be used for research purposes. This course will cover central concepts and principles for design and critical interpretation of Nordic register-based studies, taking ethical aspects and legal principles into consideration, and be divided into three aligned modules. The third module will be integrated in the two other modules.
Kursens lärandemål : At the end, the student should be able to: Module 1: - describe theoretical models for causation and discuss the principles of causal mechanisms, - recognise and formulate well-defined research questions and explain how these are related to the choice of study design, - explain and contrast central concepts in epidemiological and sociological life-course research, - explain strengths and weaknesses in common methods and study designs used in register-based research, - apply knowledge, skills and scientific approach when critically reviewing register-based studies as well as when designing studies in this field. Module 2: - reason about how to identify register data to answer the research question under study, - reflect upon different quality aspects, comparability and discrepancies between data sources when combining register data from different countries, - identify and explain possible sources and structures of bias, - evaluate how different sources of bias may influence the findings arising in studies and steps to prevent these, - apply the knowledge attained to identify and reason about potential biases in own research. Module 3: - discuss legal principles and laws that apply to research on personal data, - reason about legal systems that protect individual privacy with respect to how personal data are used and distributed to others, - reason about ethical principles that apply, with specific focus on personal privacy, informed consent and the concept of benefit/harm, - give adequate consideration of ethical aspects and legal principles when handling personal data in relation to own and others´ research projects.
Kursens innehåll : The perspective is Nordic by default, as the course will focus on methodological, practical, ethical and legal aspects of utilising register data from different Nordic countries for research purposes. Module 1: Central concepts, designs and methods in epidemiological and sociological life-course research. The module focuses on formulation of research questions, central concepts and general principles for study designs and methods commonly used when utilising register data. Designs and methods will be presented in the context of several case studies. Module 2: Identification of data and analysis of bias in registers. The module focuses on major steps in identifying relevant data from different Nordic countries, and comparability and discrepancies between data sources when combining data. We will cover how to identify and prevent different sources of bias, and aspects that should be kept in mind to gain a deeper understanding of when and how bias can occur, as well as the magnitude and possible direction of bias. Issues related to data quality, such as different variable definitions, data collection methods, reporting procedures, completeness and coverage, and how these aspects can vary, for instance over time and between geographic regions, will be highlighted. Module 3: Ethical and legal aspects of using personal information in register-based research. The research community is entrusted with their professional responsibility when utilising register data for research purposes. As register data is not primarily collected for research, it is critical to protect and guarantee individual privacy with respect to how personal data are used and distributed to others. This module will be integrated in the above modules and address legal aspects and laws that apply to register-based research, and ethical principles that should be emphasised in this context.
Arbetsformer : The course will be divided into three aligned modules. The third module will be integrated in the two other modules. The emphasis is on analysis, synthesis and the ability to make critical and independent interpretations, so-called higher order thinking skills. Different strategies, such as interactive lectures and various forms of group assignments will be used. All activities are designed to stimulate active learning, and communication between peers and teachers. Diverse perspectives and a broad, cross-border approach for various problem areas will be promoted, and cross-fertilisation between different disciplines will be stimulated. The collaborative-learning nature of assignments is also highlighted and peer learning emphasised
Examination : Learning outcomes, teaching and learning activities, and assessment methods will be constructed so that they harmonise, so-called constructive alignment. Assessment and learning are seen as linked and not separate processes. The examination tasks contain formative and summative features. Different methods for feedback on assignments are used, both so-called peer assessment and teacher-to-student. The individual examination (summative assessment) constitutes separate take-home examinations for module 1 and module 2, respectively. Assessment of ILOs for module 3 will be integrated in the assessment for the other two modules. A pass is needed in the three modules in order to pass the course.
Obligatoriska moment :
Antal studenter : 12 - 20

Urval av studenter : Eligible doctoral students will be selected based on 1) the relevance of the syllabus for the applicant's doctoral project, and 2) date for registration as doctoral student (priority given to earlier registration date). To be considered, submit a completed application form. Give all information requested, including a description of current research and motivation for attending, and an account of previous courses taken.
Övrig information : This two-week course is divided into two separate course weeks. The dates are September 23-27, 2019 (week 1) and January 13-17, 2020 (week 2). The course will be arranged as a retreat somewhere in Sweden. Travel costs and accommodation will be covered in relation to the educational activities.

 The target group is doctoral students (and those who have recently completed their doctoral education) involved in register-based research within their research training. Eligible applicants are registered doctoral students at a Nordic higher education institution.

 A letter of motivation from the main supervisor is required, which should state that the student is recommended and permitted to take part in the course (with the exceptions of emergencies), (not exceeding one A4 sized page). This letter should be emailed to johanna.bergman@ki.se.

Kursansvarig :
Anita Berglund
Institutet för miljömedicin

Anita.Berglund@ki.se

Kontaktpersoner :
Johanna Bergman
Institutet för miljömedicin

johanna.bergman@ki.se

Nobels väg 13

17177
Stockholm

Title : Clinical and experimental neuroimmunology

Kursnummer : 3200
Antal högskolepoäng : 1.5
Datum : 2019-10-14 -- 2019-10-18
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Clinical Neuroscience
Särskild behörighet :
Kursens syfte : The purpose of this course is to enable doctoral students and other participants to gain an understanding of the major neuroinflammatory diseases and the key players involved, including the interaction between the central nervous and immune systems. An additional purpose is that those who participate in the course learn to understand critical aspects of creating and using experimental systems to model neuroinflammatory diseases.
Kursens lärandemål : After this course the students should be able to: (i) describe the basic clinical characteristics of the major neuroinflammatory diseases; Multiple Sclerosis (MS), Myasthenia Gravis (MG) Guillain-Barré Syndrome (GBS), and Narcolepsy, (ii) explain how to create experimental models for neuroinflammatory diseases in rats and mice, compare models and discuss their advantages and limitations, (iii) evaluate and interpret new findings and recent scientific papers in the field in relation to main previous findings and (iv) speculate on molecular mechanisms underlying neuroinflammatory disease and hypothesize how knowledge on these mechanisms can enable therapy and prevention.
Kursens innehåll : The course includes an overview of clinical symptoms, signs, pathology, treatments and diagnostic criteria for the most important neuroimmunological diseases including MS, MG GBS/CIDP and Narcolepsy. Also included is an overview of experimental models of neuroimmunological diseases, with an emphasis on techniques for genetic analysis (intercrosses, congenics, transgenics etc). Key molecular concepts in neuroinflammation are covered such as immune mechanisms (the blood-brain barrier (BBB), major cell players, MHC-TCR interaction, costimulation, chemoattraction) as well as key tissue degeneration/regeneration. Different techniques used to study neuroinflammation are discussed including imaging, high-throughput genotyping, expression analysis and proteomics.
Arbetsformer : The course combines: (i) traditional lectures (usually in the morning), given by the experts in the field, (ii) an afternoon with video demonstrations of experimental models, (iii) a structured discussion in small groups to design an experimental model for one of the major neuroinflammatory diseases with a short presentation to the class, followed by the evaluation of strengths and weaknesses of an experimental model proposed by another group and (iv) an individual assignment followed by an interactive presentation/discussion on the last day. The assignment will consist of a presentation of a high-impact scientific paper relevant to the student's own research topic and that is of importance for the neuroimmunology field.
Examination : Examination will be based on the groups assignment/discussion and the individual assignment, including the subsequent discussions (please see "Teaching and learning activities") and the feedback given to other students on their assignments. In their presentations, students should be able to comment on the design of their experimental model for one of the major neuroinflammatory diseases or article of choice in the context of the items described above under "learning outcomes". Guidelines for the preparation of the assignments will be sent out to the students two weeks before the start of the course.
Obligatoriska moment : All lectures, demonstrations and group tasks are compulsory. Compensation for absence can be discussed with the course directors, and may involve literature reviews with written reports on the topic missed.
Antal studenter : 10 - 30
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : The course will run Monday - Friday, 8:30/9:00 - 17:00. The course will be located at CMM on the Universityhospital campus in Solna: Building L8, Karolinska Vägen 6, 171 76 Solna. The course is given jointly by the doctoral programmes Allergy, immunology and inflamation (Aii) and Neuroscience (Neuro). See: https://ki.se/en/staff/doctoral-programmes.

Kursansvarig :
Pernilla Strid
Institutionen för klinisk neurovetenskap

Pernilla.Strid@ki.se

Kontaktpersoner :
Milena Zeitelhofer-Adzemovic
Institutionen för klinisk neurovetenskap

Milena.Zeitelhofer-Adzemovic@ki.se

Manuel Zeitelhofer
Institutionen för medicinsk biokemi och biofysik

Manuel.Zeitelhofer@ki.se

Title : Teaching and Learning in Higher Education: A Doctoral Course

Kursnummer : 3201
Antal högskolepoäng : 4.5
Datum : 2019-09-16 -- 2019-12-13
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : Department of Learning, Informatics, Management and Ethics
Särskild behörighet :
Kursens syfte : The course aims to prepare students for teaching in higher education and contribute to the professional development as teacher.
Kursens lärandemål : Intended Learning Outcomes At the end of the course, students are expected to be able to: - Analyse different roles of a professional university teacher and current conditions related to teaching-learning within higher education. - Understand and be able to employ core educational concepts of teaching and learning in Higher Education. - Design teaching in regards to outcome- and competency based curriculum frameworks in relation to theories of learning or research on student learning in higher education.
Kursens innehåll : - Roles and conditions related to being a professional university teacher - Pedagogical core concepts - Students learning in higher education - Different forms of teaching and learning activities - Design of teaching for learning
Arbetsformer : This course is based on theories of experiential learning, collaboration and meaningful learning. This means that active participation during course sessions is an essential part of the course content. Students get the opportunity to experience a variety of teaching-learning activities and teaching techniques related to e.g. lectures, different forms of seminars and group work. The variety of forms is planned to facilitate learning and serve as models for own teaching.
Examination : Participants will through a written essay describe and review a teaching experience (or if needed participated as a student) within higher education, reason about the experience based on pedagogical theories/principles. The essay maybe written in English or Swedish and will be presented orally.
Obligatoriska moment : - Participation during webinar. The webinar, scheduled for 1.5 hours, is used to follow up one of the assignments and will be held in Zoom. - Provide feedback based on peer-review of one written essay. Absence from compulsory sessions can be compensated through written tasks.
Antal studenter : 12 - 18
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date).
Övrig information : This is a three week course spread out over the term and which requires time for independent work outside of scheduled class time. Scheduled sessions are on the following dates: 16 September, 29 October (Webinar) and 3 December. The course is given in English.
 This course has previously been given with number 2434.

Kursansvarig :
Per Palmgren
Institutionen för lärande, informatik, management och etik

per.palmgren@ki.se

Kontaktpersoner :
Karin Wrangö
Institutionen för lärande, informatik, management och etik

karin.wrango@ki.se

Title : Cell Death and Cancer

Kursnummer : 3202
Antal högskolepoäng : 1.5
Datum : 2019-11-25 -- 2019-11-29
Språk : Engelska
Nivå : Doctoral level
Kursansvarig institution : The institute of Environmental Medicine
Särskild behörighet :
Kursens syfte : The purpose of this course is to bring PhD students and young researchers to an advanced level in the fast-developing scientific fields of cell death and cancer, and to provide knowledge that can be applied both for basic, pre-clinical and clinical research. The participants will have the possibility to develop their analytical and critical thinking and to obtain a broad knowledge and a systematic understanding of the role of disturbances of various cell death mechanisms in tumor development as well as how to use this knowledge in order to target cancer cells and increase their sensitivity to therapy.
Kursens lärandemål : After the course the students will be able to show a detailed knowledge concerning the relationship between cell death and proliferation as well as a role of cell death in tumour progression, metastasis and cancer therapy. Students will be able to analytical and critical thinking.
Kursens innehåll : The course will start with an introduction to the field of cell death (apoptosis) and its role in biology and medicine. Then the lecturers will organize their presentations to give a comprehensive and pedagogical overview of the research area and discuss the latest results available on: (i) explanation of cancer as a complex genetic disease; (ii) general mechanisms of cell death; (iii) Autophagic cell death; (iv) regulators of cell death and survival; (v) mitochondrial functioning in cancer cells; (vi) Role of c-myc in carcinogenesis and cell death; (vii) efficiency of cell death machinery in tumour cells; (viii) Role of growth factors in carcinogenesis and apoptosis; (ix) tumour promoters and suppressors in regulation of cell death; (x) Tumor viruses and apoptosis; (xi) Epigenetic deregulation in cancer; (xii) Role of immune response in carcinogenesis and apoptosis; (xiii) Senescence, apoptosis and therapy; (xiv) Role of cell-matrix interactions for cell survival; (xv) Role of neovascularization in regulation of cell death; (xvi) DNA damage recognition, signalling and repair: links with the cell cycle progression, cell death and carcinogenesis; (xvii) Kinases, apoptosis and cancer drugs; (xviii) miR's in cancer and cell death. the course will be ended with a general discussion on the hot topics in cell death and cancer.
Arbetsformer : The course will consist of lectures and seminars and literature studies. At the end of each seminar there will be a discussion. In addition, students will present and discuss their PhD projects including the methodology.
Examination : The course assessment will be based on individual oral presentation on a selected topic of the course. The course organiser will be in charge of the examination and will provide immediate feedback in line with the concept of formative assessment. The presentation will be designed in a way to help the course organizer (examiner) to be sure that the learning outcomes are reached by the students.
Obligatoriska moment : Lectures, seminars and presentation of projects are compulsory. Missed lectures and seminars have to be compensated for by other activities after discussion with the course leader.
Antal studenter : 10 - 30
Urval av studenter : Selection will be based on 1) the relevance of the course syllabus for the applicant's doctoral project (according to written motivation), 2) date for registration as a doctoral student (priority given to earlier registration date)
Övrig information : The course will take place from Monday to Friday (from 9.00 up to 17.00). The course will be held at the Institute of Environmental Medicine (Nobels väg 13).
 The course has previously been given with number 2267.

Kursansvarig :
Boris Zhivotovsky
Institutet för miljömedicin
0852487588
Boris.Zhivotovsky@ki.se

Nobels väg. 13

17177
Stockholm

Kontaktpersoner :
-