



DEPARTMENT OF ONCOLOGY-PATHOLOGY

K7F2291, Clinical Achievements of Reproductive Medicine, 1.5 credits (hec)

Kliniska framsteg genom reproduktiv medicin, 1,5 högskolepoäng

Third-cycle level / Forskarnivå

Approval

This syllabus was approved by the The Committee for Doctoral Education on 2025-02-14, and is valid from autumn semester 2025.

Responsible department

Department of Oncology-Pathology, Faculty of Medicine

Prerequisite courses, or equivalent

No prerequisite courses, or equivalent, demanded for this course.

Purpose & Intended learning outcomes

Purpose

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.

Intended learning outcomes

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.

Course content

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 dysgenesis
 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

Forms of teaching and learning

Lectures, seminars/discussions and laboratory demonstrations.

Language of instruction

The course is given in English

Grading scale

Pass (G) /Fail (U)

Compulsory components & forms of assessment

Compulsory components

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.

Forms of assessment

Written examination and general group discussion of relevant parts of the examination.

Course literature

Recommended literature:

Textbook of Assisted Reproductive Techniques, Fourth Edition. David K. Gardner, Ariel Weissman, Colin M. Howles, Zeev Shoham. Informa, 2012.

Clinical Gynecologic Endocrinology and Infertility. Marc A. Fritz and Leon Speroff. Wolters Kluwer, 2010.

Infertility; Julius Hreinsson, Lars Hamberger, Thorir Hardarson, Studentlitteratur, 2005

New micromanipulative techniques in reproductive biology. Thesis dissertation, Karolinska Institutet. José Inzunza
Stockholm, 2003 (Stockholm: Karolinska University Press).

Rodriguez-Wallberg KA, Oktay K. Fertility preservation during cancer treatment: clinical guidelines. Cancer management and research, 2014 Mar 4;6:105-117.

Other information

Replacing H9F2291 (change of department).