Ansökan om medel för fakultetsgemensam forskarutbildningskurs 2018
Application for funding of faculty common course 2018

Kursnamn: Biological characterization of biomaterials
Name of course

Omfattning (högskolepoäng): 5 hp
ECTS credits

Tidsperiod: Autumn 2018
Course period

Antal platser: 25
Maximum number of participants

Undervisningsspråk: English
Language of instruction

Kursens syfte samt motivering till varför den bör vara fakultetsgemensam (max 150 ord)
Aim of course and motivation as to why it should be considered “multidisciplinary” to the extent that the faculty should allocate extra financing.
There are several research groups at Uppsala University working with biomaterials to substitute or regenerate tissue. To date, Uppsala University does not have any course explicitly focused on the assessment of the biological properties of biomaterials. Biomaterials development is a part of a multidisciplinary domain since it involves knowledge on chemistry, materials science and biology. This course aims to give a deeper knowledge about how biomaterials are commonly tested in vitro (cell cultures) as well as in vivo (animal models).

Kursinnehåll, kursens uppläggning samt examinationsform (max 150 ord)
Contents, study format and form of examination
The course will consist on 10 two-hour (45min x 2) sessions based on the in vitro characterisation of biomaterials (70%) and in vivo studies (30%).

The content of the course will be the following:
• Basics about cells and sterilization of materials
• Interaction between proteins and biomaterials
• 2-dimensional cultures
• 3-dimensional cultures
• Biomaterials-on-chip
• Lab methods to quantify proteins and cells behaviour + visit to cell lab
• Animal testing
• Animal testing legislation and ethics
• Animal testing applications

The course will use modern ways of teaching: lectures (beginning of the session) + flipped classroom + seminars. This will be done to ensure the students engage in their own learning process.

The examination will be divided in three parts: 40% assignments + 30% individual project + 30% active participation in seminars and activities.
Target group/s (specify, if possible, subject/specialization) and recommended background

This course will be of interest for all PhD students performing research on different types of biomaterials, involving departments such as Engineering Sciences, Chemistry, Biology, Pharmacy, Medicine and Medtech for Health. We expect that this course will catch the interest of students located at Ångström laboratory, Biomedical Centrum, Rudbeck and Uppsala University Hospital. Bringing together students that do research on biomaterials from different fields, and therefore using different perspectives and approaches, will be beneficial for the class and may even initiate interdisciplinary collaborations between research groups.

Huvudansvarig institution: Engineering Sciences
Department with main responsibility

Andra inblandade institutioner (specifera hur).
Other departments involved (specify how).
Department of Surgical Sciences (Gry Hulsart-Billström is affiliated to this department as well).

Kontaktperson(er) (namn, e-postadress)
Contact person (name, e-mail address)
Gemma Mestres, gemma.mestres@angstrom.uu.se
Gry Hulsart Billström, gry.hulsart@angstrom.uu.se

Anmälan om kursdeltagande till
Application from course participants should be sent to
Gemma Mestres, gemma.mestres@angstrom.uu.se

Senast: September 15th 2018
Not later than

Kursen har tidigare givits (ange när) med deltagare (ange antal)
The course has previously been given (specify when and number of participants)