FKF3250 Biomaterial and Tissue Engineering 7.5 credits

Biomaterial och vävnadsteknik

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

Course syllabus for FKF3250 valid from Spring 2010

Grading scale

G

Education cycle

Third cycle

Specific prerequisites

Basic knowledge in chemistry and Polymer Technology, for example KF1040/KF1010

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

This course is designed for scientists to gain an understanding of how materials should be designed for optimal results in tissue engineering. An additional aim is to understand how cells and proteins interact with materials.

After the course the student should be able to:

- Analyze advantages and disadvantages of methods for scaffold fabrication

- Discuss advantages and disadvantages of commercial materials that are used in tissue engineering today

- Explain how material properties influence the cell response

- Explain different techniques for cell identification and quantification of cell properties

- Describe the regulations and ethics in tissue engineering

Course contents

1. Lectures

The course deal with the interdisciplinary field tissue engineering and will (i) describe advantages and disadvantages with different fabrication methods for different scaffolds (ii) present commercially available scaffolds and discuss their applications (iii) introduce cell biology and discuss how the material properties influence the cell response (iv) give the basic knowledge in the most common characterization methods (v) inform about rules and ethics

1. Home assignments
2. Project and oral presentation

Examination

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

- 80 % attendance

- Oral presentation and written report

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.