



**Karolinska
Institutet**

Course syllabus for

Cell Culture Methods, 3 credits

Cellodling, 3 hp

This course has been cancelled, for further information see Transitional provisions in the last version of the syllabus.

Please note that the course syllabus is available in the following versions:

Autumn2008 , Autumn2012

Course code	1BA017
Course name	Cell Culture Methods
Credits	3 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Biomedical Laboratory Science
Level	G2 - First cycle 2
Grading scale	Pass with distinction, Pass, Fail
Department	Department of Laboratory Medicine
Decided by	Programnämnden för Biomedicinska analytikerprogrammet
Decision date	2008-05-19
Revised by	Programnämnd 6 (Biomedicinsk analytiker- och Röntgensjuksköterskeprogrammen)
Last revision	2012-05-09
Course syllabus valid from	Autumn 2012

Objectives

The course should provide the student with knowledge such that the student can carry out basic cell-culture techniques properly and safely, and explain factors of significance in the cultivation of cells in vitro. On completion of the course, the student should be able to: - account, at a general level, for the structure and function and maintenance of an LAF/sterile bench and be able to work in this with a good sterilisation technique - account for different preventive measures to avoid contamination of cell cultures and how a contaminated cell culture may be treated - explain how mycoplasma contamination affects eukaryotic cells - account in detail for sterilisation equipment and different sterilisation techniques - account for different cell-culture media and important components in the media - explain the concept of transformation and describe different transformation methods - be able to apply basic cell-culture techniques, such as calculation and harvesting of cells - explain different factors of significance in the cultivation of cells in vitro

Content

The course starts with a basic lecture about sterile technique. Thereafter, the laboratory work starts in

pairs in small groups. This is then interleaved with half class lectures. In the practical laboratory work, the student will learn to count, pass and transform cells. Also operations such as freezing, thawing and harvesting cells, by means of trypsin, are included. Both light microscopy and immunofluorescence are demonstrated and carried out. Causes of differences in laboratory results obtained by the students are analysed and discussed in seminars. Strong focus is set on the student acquiring a good sterilisation technique through practical training and supervision during the laboratory parts.

Teaching methods

The teaching is given as lectures, seminars and laboratory sessions. Parts of the laboratory work should be documented in a laboratory report that is then discussed in following seminar. The student documents laboratory work in a personal workbook.

Examination

The course is examined through written examination of respective parts and passed laboratory sessions, group works and assignments. Participation in the written examination requires that all the compulsory parts must be completed and approved. Attendance at laboratory sessions, study visits, seminars, and presentations are compulsory. In case of absence, an agreement between the student and responsible teacher concerning compensation is made. Students who have not passed the regular examination are entitled to participate in five more examinations. If the student is not approved after four examinations, he/she is recommended to retake the course at the next regular course date and may, after that, participate in two more examinations. If the student has failed six examinations/tests, no additional examination or new admission in the course is given. The number of times that the student has participated in one and the same examination is regarded as an examination session. Submission of a blank examination is regarded as an examination. An examination for which the student registered but not participated in, will not be regarded as an examination.

Other directives

Course evaluation will be carried out in accordance with the guidelines established by the Board of Education.

Literature and other teaching aids

Butler, M. q (Michael)

Animal cell culture and technology

2. ed. : London : BIOS Scientific Pub., Pub., c 2 - xii, 244 p.

ISBN:1-85996-049-9 (pbk.) LIBRIS-ID:9050534

[Library search](#)

Hultgren, C

Kompendium i cellodlingstekniker

Ringsrud, Karen Munson; Linné, Jean Jorgenson

Linné & Ringsrud's Clinical laboratory science : the basics and routine techniques

Turgeon, Mary L.

5. ed. /b [editor] Mary L. Turgeon : St. Louis, Mo. : Mosby Elsevier, cop. 2007 - xiv, 608 s.

ISBN:0-323-03412-8 LIBRIS-ID:10255799

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