Course syllabus for

Advanced Course in Development Biology and Regenerative Medicine, 9 credits

Avancerad kurs i utvecklingsbiologi och regenerativ medicin, 9 hp
This course syllabus is valid from autumn 2019.
Please note that the course syllabus is available in the following versions:
Autumn2017 , Autumn2019

Course code	4BI104
Course name	Advanced Course in Development Biology and Regenerative Medicine
Credits	9 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Biomedicine
Level	AV - Second cycle
Grading scale	Pass, Fail
Department	Department of Clinical Science, Intervention and Technology
Decided by	Programnämnden för biomedicinprogrammen
Decision date	2017-04-12
Revised by	Programme committee for study programmes in biomedicine
Last revision	2019-03-27
Course syllabus valid from	Autumn 2019

Specific entry requirements

At least the grade G (pass) on the courses Applied communication in biomedicine 1 including philosophy of science and bioethics, Applied communication in biomedicine 2, Frontiers in translational medicine, Laboratory animal science in theory and practice, and Biostatistics, within the Master's Programme in Biomedicine.

Objectives

The main objective of this advanced course is to introduce students to the latest advances within the field of stem cells in the context of developmental biology towards embryology and regenerative medicine. This course also emphasises the importance of sex and gender aspects in biomedical research. Finally, this course includes activities to strengthen transferable skills via inclusion of creativity, science communication and collaboration with the TEDx Stockholm community.

On completion of the course, the student should be able to:

With regards to Knowledge and Understanding:

* Explain human reproductive biology and human-assisted reproductive biology.

* Explain the use of stem cells and other biomedical platforms to design regenerative therapies.

With regards to Competence and Skills:

* Discuss the most important technologies and methods for the use of stem cells in assisted reproductive biology and regenerative medicine.

* Communicate scientific concepts in a clear and accessible manner.
With regards to Judgment and Approach:

* Critically analyse the latest advances within the field of embryology and assisted reproductive technologies, stem cell research and regenerative medicine and propose potential future steps.

* Demonstrate critical thinking to evaluate and propose the incorporation of sex and gender perspectives in biomedical research and in the design of therapies.

Content

The course covers state-of-the-art concepts in stem cells, assisted reproductive biology, cryopreservation of gametes and embryos, isolation and characterization of stem cells, use of stem cells for regenerative medicine. The course addresses the importance of including sex and gender perspectives within biomedical research. The course also includes activities to develop creative thinking and science communication skills, together with potential involvement towards social entrepreneurship in the community.

Teaching methods

The pedagogical framework of the course is based on active, student-centred learning. The students will participate in lectures, journal clubs, online learning, practical laboratory demonstrations, and group projects. The students are expected to take an active role to prepare for learning occasions, to discuss the latest scientific advances during learning occasions and within groups of peers, to actively interact and discuss with experts within the fields of embryology and regenerative medicine. The students will be involved in creative and innovative thinking, which they will present as hypothesis-driven original scientific proposals.

Examination

The examination consists of written assignments or exams and oral presentations. Students must pass the examination of every module in order to pass the course.

Compulsory participation
Course introductions, group assignments, seminars and demonstrations are compulsory. The course director assesses if and, in that case, how absence can be compensated. Before the student has participated in all compulsory parts or compensated absence in accordance with the course director's instructions, the student's results will not be registered in LADOK.

Absence from a compulsory activity may result in that the student cannot compensate the absence until the next time the course is given.

Limited number of examinations or practical training sessions
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 is provided. 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 counted as an examination.

If there are special grounds, or a need for adaptation for a student with a disability, the examiner may decide to deviate from the syllabus's regulations on the examination form, the number of examination opportunities, the possibility of supplementation or exemptions from the compulsory section/s of the course etc. Content and learning outcomes as well as the level of expected skills, knowledge and abilities may not be changed, removed or reduced.

Transitional provisions

After each course occasion there will be at least six occasions for the examination within a two-year period from the end of the course.

Other directives

The course language is English.

Literature and other teaching aids

Course literature is scientific papers and material handout out during the course.