Course syllabus for

Cell Biology, Development and Regeneration, 6 credits

Cellbiologi, utveckling och regeneration, 6 hp
This course syllabus is valid from autumn 2022.

Course code	4BI126
Course name	Cell Biology, Development and Regeneration
Credits	6 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Biomedicine
Level	AV - Second cycle
Grading scale	Fail (U) or pass (G)
Department	Department of Cell and Molecular Biology
Participating institutions	• Department of Clinical Science, Intervention and Technology
Decided by	Programme committee for study programmes in biomedicine
Decision date	2022-09-23
Course syllabus valid from	Autumn 2022

Specific entry requirements

At least the grade G (Pass) for the courses Frontiers in Biomedicine, Applied Biostatistics, Bioinformatics, semester 1 elective course, Bioethics and Laboratory Animal Science, Applied Biomedical Communication and Professional Development, and registration for the course Frontiers in Biomedicine: Research Project 1, within the Master's Programme in Biomedicine.

Objectives

The main objective of this course is to introduce the student to the latest advances in the fields of stem cell and developmental biology, regenerative medicine, genetics and genomics.

Using a translational approach, the course will provide increased understanding of systems biological functions in health and disease. The importance of sex and gender perspectives, sustainable development and internationalization in biomedical research will be presented.

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

Regarding knowledge and understanding

- Explain and discuss central concepts, methods and technologies in cell biology, genetics and genomics;
- Explain principles of human reproductive biology and health, including human-assisted stem cell and reproductive technologies and therapies;

Regarding competence and skills

- Be able to select, compare and critically evaluate methods and technologies used in cell biology, genetics and genomics research, as well as in the fields of developmental biology and regenerative medicine;
- relate experimental biomedical research to clinical therapies, including goals of sustainable development;
- Discuss the latest advances within the field of embryology, assisted reproductive technologies, stem cell research and regenerative medicine and propose potential future steps to improve health outcomes;
- Communicate scientific concepts in a clear and accurate manner both in speech and writing;

Regarding judgement and approach

- Demonstrate critical thinking when evaluating and proposing the incorporation of sex and gender perspectives in biomedical research and in the design of therapies.
- Discuss, based on relevant literature, the impact of genetic information on health and disease, including ethical considerations.

Content

The course consists of several modules within the areas of cell biology, genetics and genomics, as well as developmental biology and regeneration.

Teaching methods

The modules include lectures, discussions, seminars, laboratory practicals and demonstrations of methods and technologies. Great emphasis is placed on learner-centered activities, interactivity and peer learning, primarily during the experimental exercises and during the workshops. In addition, digital tools such as web-based modules will be used to enhance the process of learning.

Examination

Examination is performed at the end of each module and consists of oral and/or written assignments. Examination format will be communicated at the latest at the start of each module. The grading scale is fail/pass (U/G). To pass the entire course, a student must obtain the grade of pass (G) for all modules in the course.

Compulsory participation
Seminars, group work and laboratory sessions are compulsory according to information provided by each module. The course examiner assesses if and, in that case, how absence from compulsory components can be compensated for. A student's study results cannot be finalised/registered until the student has participated in the compulsory components or compensated for their absence in accordance with the examiner's instructions. Absence from a compulsory component may mean that the student cannot compensate for absence until the next time the course is given.

Limitations of the 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 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.

Other directives

The course language is English and examination is performed in English.

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

Oral evaluation in the form of course council meetings will be carried out during the course.

Literature and other teaching aids

Course literature comprises scientific papers and teaching material handed out prior and/or during the course.