

Degree	Type	Year	Semester
4317563 Transfusion Medicine and Cellular and Tissue Therapies	OB	1	1

Contact

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Use of Languages

Principal working language: English

Other comments on languages

The primary language used during the course will be English. However, the use of Spanish will also be allowed. The course materials will also be in English.

Teachers

Luciano Rodríguez Gómez: Graduated in Biochemistry, he has more than fifteen years of experience making human cells and tissues for clinical use. Currently works as technical director of advanced therapy medicinal products at BST. His background includes procurement, handling, cryopreservation, quality control, and quality management of cell and tissue facilities.

Joaquim Vives Armengol: Has a degree and a doctorate in Biochemistry and an MSc in Biotechnology (UAB, Spain). He has focused his scientific activity internationally, both in the industry and the academia, on developing bioprocesses for the generation of cell-based products for diagnostic and therapeutic use. He did a Post-Doc in Stem Cell Biology at the University of Edinburgh (Scotland), was Head of Research at Stem Cell Sciences UK Ltd (Cambridge, UK) and a Visiting Scientist at the Burnham Institute (La Jolla, EE. UU.), at the ETH (Zurich, Switzerland) and at the University of Milan (Italy). Since 2008, he has applied his experience and knowledge to developing advanced therapies that meet quality, and regulatory requirements in the Banc de Sang i Teixits Barcelona laboratory.

Prerequisites

Level B2 or equivalent in English.

Objectives and Contextualisation

In this module, the most extensive of the programme, will be about advanced therapies. Cell therapy and the basic concepts will be introduced in order to follow with the in-depth study of haematopoietic cell therapy, immunotherapy, and regenerative medicine.

The module goes into depth on the cell banks, cord and tissue banks with an emphasis on safety, standards and quality credentials of the bio-banks, as well as the regulatory and ethical aspects.

Competences

- Use acquired knowledge as a basis for originality in the development and/or application of ideas, often in a research context.
- Use acquired knowledge to solve problems in new or little-known situations within broader (or multidisciplinary) contexts related to the field of study.
- Apply the biological principles of cell therapies applicable in the treatment of local and systemic disease processes.
- Integrate scientific and technical knowledge in accordance with a commitment to ethics and the code of conduct.
- Take reasoned decisions based on critical, objective analysis.

Learning Outcomes

1. Understand the different concepts and levels of *ex vivo* cell manipulation.
2. Identify the biological and technological basis of cell immunotherapy.
3. Describe the state of the art of the different concepts of regenerative medicine.
4. Describe the different concepts and processes of a tissue bank.

Content

- Introduction to advanced therapies.
- Haematopoietic stem cells.
- Immunotherapy.
- Cell therapy for organ repair.
- Regenerative medicine.
- Advanced therapies.
- Umbilical cord cell bank.
- Tissue bank.

Methodology

The methodology for this course is active and constructive. It does not only contemplate the content but also reading, reflecting and applying knowledge to reasonably close situation to create meaningful learning.

Students will work on real life examples and case studies, reflecting on complex and relatively unstructured situations to find adequate solutions.

Faithful to the proposed methodology, students form the centre of the learning process and generate knowledge by interacting significantly with their peers, with the teaching materials and with the environment. This programme not only teaches training in a virtual environment but also allows them to experience their learning every day.

At the beginning of the unit, the teacher will present a learning plan to the group with specific objectives, learning activities, the necessary resources and recommended deadlines for each activity.

The dates for carrying out the activities are recommended in order to be able to follow the course. The only fixed dates are the beginning and end of each teaching unit. This means that students can do their own planning but they must respect the dates for the beginning and the end of each unit.

Students are recommended to work in a continuous and consistent manner and not allow tasks to accumulate around the deadlines, which may lead to haste, undue time pressure and not allow the students to enjoy their learning or carry out additional reflections. Also the course offers group activities which require synchronisation among the group.

Some of the activities must be send online to the teacher for assessment and receive feedback of progress. Teachers will return the work with comments and together the students can continue to think and learn. The deadline for each of these activities is the end of the teaching unit. Other activities will consist in discussion and working together in shared spaces.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed	38	1,52	
Discussions			1-9
Type: Supervised	131	5,24	
Virtual Cases/Problem Solving			3, 4, 9
Elaboration of Projects			5, 6, 7, 8

Type: Autonomous	206	8,24
Test/Scheme		1-9
Personal Study		1-9
Reading Articles/Reports of Interest/Videos		1-9

Assessment

This module will be assessed as follows:

1. Moderated discussions on the online campus (Campus Virtual). These discussion account for 20% of the grade.
2. Work, tests, online cases and problem solving. These activities count for 60% of the grade.
3. Personal study, reading articles and reports of interest and/or videos. This individual work counts for 20% of the grade.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Exercise 1	7 %	25	1	2
Exercise 2	13 %	62,5	2,5	3
Exercise 3, 4	28 %	150	6	4
Exercise 5, 6	10 %	50	2	5
Exercise 7, 8	7 %	25	1	6
Exercise 9	7 %	25	1	7
Exercise 10	7 %	25	1	8
Exercise 11	3 %	12,5	0,5	9

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