

## Title of BIP: Gene and Cell-based therapy 2026

<b>General information</b>
<p><b>Objectives and Description:</b> The course will start by focusing on the fundamentals of gene and cell-based therapies and address the forefront of research in areas such as CRISPR and Gene Editing, CAR-T Cell Therapy, Gene Therapy, Stem Cell Therapies, immunotherapy, Regenerative Medicine, Synthetic Biology.</p>
<p><b>Methods and outcomes:</b> The course will apply teaching approaches that prioritize students' needs, interests, and abilities, actively involving them in the learning process. The program includes seminars by experts in gene and cell-based therapies, promotes students' engagement with the material through discussions, and hands-on activities in groups with peer interactions to foster international collaboration and communication skills. After the course, students will get an in-depth insight into the cutting-edge and rapidly developing field of cell and gene therapies.</p>
<p><b>Field of Education:</b> Biomedical/Biological Sciences</p>
<p><b>Target audience / Participant profile:</b> MSc students, finalists of BSc courses, PhD students</p>
<p><b>No of ECTS issued:</b> 3</p>
<p><b>Language of instruction and requirements:</b> English (the minimum requirement to apply is English language Level B1).</p>
<p><b>Dates for on-site activity:</b> 13th-17th July 2026</p>
<p><b>Location of on-site activity:</b> <i>University of Turin</i>, Italy Department of <b>Molecular Biotechnology and Health Sciences</b></p>
<p><b>Dates for the virtual component:</b> May 12 and June 19th 2026 (not overlapped with the scheduled classes of the master program)</p>
<p><b>Virtual Component Description:</b> The virtual component will consist of a training seminar and a teamwork exercise before mobility.</p>
<b>Organizing Board</b>
<p><b>Receiving/Host university:</b> <i>University of Turin</i>, Italy (Paola Defilippi, <a href="mailto:paola.defilippi@unito.it">paola.defilippi@unito.it</a>)</p>
<p><b>Sending/Partner universities:</b> <b>P1. University of Zaragoza</b>, Spain (Jose Carrodeguas, <a href="mailto:carrode@unizar.es">carrode@unizar.es</a>) <b>P2. University of Beira Interior</b>, Portugal (Mafalda Fonseca, <a href="mailto:mfonseca@fcsaude.ubi.pt">mfonseca@fcsaude.ubi.pt</a>) <b>P3. Politécnico da Guarda</b>, Portugal (Sónia Miguel, <a href="mailto:spmiguel@ipg.pt">spmiguel@ipg.pt</a>)</p>
<b>Detailed programme</b>
<p><b>1. Planned activities during virtual component:</b></p> <p>2 Synchronous sessions of 90 minutes each:  <u>12th May 2026:</u> BIP general presentation, General presentation of the topic “Gene and Cell-based therapy”.            Distribution of the themes for teamwork (each group will be constituted by students from different universities)  <u>19th June 2026, 2.00pm (PT)/3.00pm (CET):</u> (webinar)            “Biotherapies based on extracellular vesicles: from research to innovation” Dr Amanda Silva Brun, Université Paris Cité, CNR</p>
<p><b>2. Planned activities during on-site component:</b></p> <p><b>1<sup>st</sup> day (13/07/2026)</b></p>

-Morning (9.30h-12.30): Welcome + Team building activities  
Lecture: Liliana Bernardino "Essential Current Concepts in Stem Cell Biology"  
Lecture: "CAR-T Therapy: Modifying our cells to fight cancer". Speaker: Diego Sanchez  
-Afternoon: (14-16.30h)  
Webinar by Luisa Giaccone: "Cell Therapy in hematological tumors"  
- Teamwork

### **2<sup>nd</sup> day (14/07/2026):**

-Morning (9.30h):  
Lecture Giorgio Merlo "Neural stem cells and difficulties of brain repair medicine".  
Lecture Yvan Torrente "Muscle Regeneration and possible therapies for the dystrophic muscle"  
-Afternoon (14-16.30h):  
Matteo Sorge & Elisa Balmas: "Disease modelling and functional genomics in hiPSC models".  
Lecture followed by lab visit  
Cultural and leisure activities.

### **3<sup>rd</sup> day (15/07/2026):-**

Morning (10 am):  
"Bioengineering Organs for Transplantation: The Future of Transplantation Medicine?". Pedro Baptista  
Team-work  
-Afternoon (2.30 p.m. )Webinar: "Advanced Skin-on-Chip Systems: From Tissue Growth to Predictive Nanoparticle Safety" Speaker: Ana Ribeiro  
Teamwork  
Cultural and leisure activities.

### **4<sup>th</sup> day (16/07/2026):**

--Morning: 9.30  
Claudia Voena "Oncoantigen-Targeted Immunotherapies: From Bench to Bedside"  
Paola Cappello: "Immunotherapy in solid cancer: how to outsmart the tumor microenvironment"  
Teamwork presentation and discussion.

### **5<sup>th</sup> day (17/07/2026):**

Final presentations by the groups of students.  
Farewell lunch.

Evaluation and grading (scale: up to 20): The assessment will be based on two aspects: (1) the quality of interactions, in particular concerning group work collaborative activities (20%), (2) the quality of the final project work (in group) in the form of a final presentation (80%).

## **Application procedure**

Nominations must be sent to [international.medtorino@unito.it](mailto:international.medtorino@unito.it) by **April 24**.

### **Requirements:**

- proficiency in English (minimum of B1 level) since the course will be entirely in English.
- candidates must declare that they have total availability to take part in the learning activities.

### **Grading criteria:**

- curriculum average mark up to the semester prior to application -70%
- motivation letter -30%