Teaching Module Working Group
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OVERALL AIMS:
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1. To develop a method for the implementation of a lesson(s) from the Antimatter Teaching Module (ATM).
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1. To develop a method for the implementation of a lesson(s) from the Antimatter Teaching Module (ATM).

2. To contribute to the development of a new teaching module on the theme of “Medical Applications of Particle Physics”.
AIM 1

Imagine that you would like to teach a lesson (or lessons) on the topic of antimatter to your students next week.
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• How can you practically use the ATM resource with your students?
AIM 1

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• *How can you practically use the ATM resource with your students?*

• *At what point in your syllabus and at which grade level would it be useful to use the lesson?*
Imagine that you would like to teach a lesson (or lessons) on the topic of antimatter to your students next week.

• *How can you practically use the ATM resource with your students?*

• *At what point in your syllabus and at which grade level would it be useful to use the lesson?*

• *How much time would you use?*
AIM 1

Imagine that you would like to teach a lesson (or lessons) on the topic of antimatter to your students next week.

• How can you practically use the ATM resource with your students?

• At what point in your syllabus and at which grade level would it be useful to use the lesson?

• How much time would you use?

• What kinds of peripheral materials would you require? (for example, background info, handouts, homework exercises, ideas for activity-based exercises related to the lesson, etc.)
AIM 2
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To create a framework (outline/skeleton) for a teaching module on the Medical Applications of Particle Physics.
Use of Accelerators Today

- **General industrial use:**
  - Sterilisation, imaging

- **Research accelerators:**
  - Particles, synchrotron light used in biomedical, physics, chemistry, biology, material research

- **Radiotherapy:**
  - Cancer treatment with X-rays, protons and other particles

- **Ion implantation, surface modifications:**
  - Controlled semiconductor doping; Changing properties of surfaces

- **Radioisotope production:**
  - Cancer treatment; imaging organs for medical use
Linacs used in radiotherapy represent 40% of all running accelerators:
France, Germany, Italy: 4 units per million inhabitants
Switzerland: 11 units per million inhabitants
Finland: 14 units per million inhabitants
Keep in mind that...

...we are designing Teaching Modules that target students aged 14-15 years.
...and that use topics that are related to the experiments being done at CERN.
The Teaching Module Working Group...
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...will give you an opportunity to contribute directly to an educational resource that you can use immediately in your classroom.
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...take what you have learned at CERN and channel it for the benefit of physics teachers and their students worldwide.